

HOW TO PASS

GRADUATE PSYCHOMETRIC TESTS

3rd edition

ADVANCED LEVEL

Over 500 practice
questions and mock
tests to improve your
verbal and numerical
reasoning skills



MIKE BRYON



HOW TO PASS

GRADUATE PSYCHOMETRIC TESTS

Essential preparation for numerical
and verbal ability tests plus
personality questionnaires

3rd edition

MIKE BRYON



London and Philadelphia

While the author has made every effort to ensure that the content of this book is accurate, please note that occasional errors can occur to books of this kind. If you suspect that an error has been made in any of the tests included in this book, please inform the publisher at the address below so that it can be corrected at the next reprint.

Publisher's note

Every possible effort has been made to ensure that the information contained in this book is accurate at the time of going to press, and the publishers and author cannot accept responsibility for any errors or omissions, however caused. No responsibility for loss or damage occasioned to any person acting, or refraining from action, as a result of the material in this publication can be accepted by the editor, the publisher or the author.

First Published as *Graduate Recruitment Tests* in 1994

Reprinted in 1994 as *How to Pass Graduate Recruitment Tests*

Reprinted with revisions in 1995

Reprinted in 1996, 1997, 1998

Second Edition as *How to Pass Graduate Psychometric Tests* in 2001

Reprinted in 2002 (twice), 2003, 2005

Third Edition in 2007

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms and licences issued by the CLA. Enquiries concerning reproduction outside these terms should be sent to the publishers at the undermentioned addresses:

120 Pentonville Road
London N1 9JN
United Kingdom
www.kogan-page.co.uk

525 South 4th Street, #241
Philadelphia PA 19147
USA

© Mike Bryon, 1994, 2001, 2007

The right of Mike Bryon to be identified as the author of this work has been asserted by him in accordance with the Copyright, Designs and Patents Act 1988.

ISBN-10 0 7494 4852 0

ISBN-13 978 0 7494 4852 3

British Library Cataloguing in Publication Data

A CIP record for this book is available from the British Library.

Library of Congress Cataloging-in-Publication Data

Bryon, Mike

How to pass graduate psychometric tests : essential preparation for numerical and verbal ability tests plus personality questionnaires / Mike Bryon. -- 3rd ed.

p. cm.

ISBN-13: 978-0-7494-4852-3

ISBN-10: 0-7494-4852-0

1. Employment tests--Study guides. 2. Psychometrics. I. Title.

HF5549.5.E5B779 2007

650.076--dc22

2006102797

Typeset by Jean Cussons Typesetting, Diss, Norfolk

Printed and bound in Great Britain by Creative Print and Design (Wales), Ebbw Vale

Contents

<i>Preface</i>	<i>v</i>
1. Graduate psychometric tests	1
The challenge of open and fair recruitment	2
The maximum benefit of practice in ability tests	3
How much and what kind of practice?	5
Test-taking strategies	6
A summary of research findings	8
2. Personality and attitudinal questionnaires	10
Personality questionnaires in which there is strictly speaking no right or wrong answers	11
Attitudinal questionnaires to which there is most definitely a wrong answer	19
3. Great candidate except for the maths!	22
A key skills diagnostic exercise	24
Glossary of key terms and methods	33
Sixty practice number problems	46
Five practice tests	57
Numerical test 1: practice intermediate-level number problem test	59

Numerical test 2: practice intermediate-level sequencing test	67
Numerical test 3: intermediate data interpretation practice test	73
Numerical test 4: practice intermediate-level data interpretation test	91
Numerical test 5: advanced data interpretation practice test	103
4 English usage, reading comprehension and critical reasoning	115
If English is not your first language	117
If you are dyslexic or suffer some other disability	117
English usage	118
Glossary	119
One hundred and thirty-five practice questions	130
Five practice tests	161
Test 1: Practice test of English usage	163
Test 2: Practice intermediate-level critical reasoning test	173
Test 3: Practice intermediate-level critical reasoning test	183
Test 4: Practice advanced-level reading comprehension and critical reasoning test	195
Test 5: Practice advanced-level reading comprehension and critical reasoning test	207
5. Answers and many explanations	219
Chapter 2	219
Chapter 3	223
Chapter 4	227

Preface

This book is intended for the graduate who needs to revise the fundamentals of English usage or maths or both before taking a psychometric test. Many of the sections start at an easy level, lead you through the key competencies and conclude with questions at the level you can expect in a real psychometric test. Use it to stand head and shoulders above the crowd of other applicants. You will be one of the many thousands to use these proven exercises and go on to pass the tests of some of the most successful UK companies in their annual graduate recruitment campaigns.

To excel is not simply a matter of intelligence but requires you to be sufficiently motivated to want to pass and to try hard. A determination to do well is easily the most important ingredient for success. Passing a psychometric test when there are many hundreds of other candidates depends on your arriving very well prepared. Use these exercises and realistic practice tests to build up speed, accuracy and confidence. Use the grammar and maths glossaries to revise essential fundamentals.

Everyone can pass these tests, but you should realize that some candidates need to prepare more than others. This book will suit the graduate who must first revise competencies he or she may have long forgotten or never mastered. Some will have

to invest a considerable amount of time before they succeed in a test they may have previously failed.

If you are one of many thousands of candidates, then you may need to undertake a quite considerable amount of revision and use more material than is contained in this volume. These intensive competitions are a serious test of your determination, resilience and endurance – just the qualities employers are seeking, and virtues that you can develop and be justly proud of. Be prepared to make a quite considerable commitment in terms of time and effort. Otherwise, risk coming a rather poor second. Throughout, I have suggested suitable sources of further practice material in the Kogan Page testing series.

Your university course may not have prepared you very well for an employer's psychometric test. The content may seem to you faulty or arbitrary. You may well question the validity of the whole exercise. You may consider some statements made to be factually incorrect. Many very able candidates spend too long on questions, thinking too deeply about them, and their score suffers accordingly. The science graduate or engineer may hate the fact that questions are to an extent deliberately ambiguous and that diagrams and scales can be distorted, especially on computer-administered tests. It is common for graduates to feel resentment about having to take a test.

All these concerns are entirely valid but they will not help. The test author has designed the question so that there is a correct answer. If the scale is distorted then the question is bound to contain the information you need to answer it correctly. Yes, the test may well contain controversial or factually incorrect statements. That is intentional, because they are testing you! Make sure you answer the question, not question the questions. They want the flexible worker, the employee who can follow instructions, the person who makes good decisions in a less than perfect world. They are looking for the candidate who can draw the best inference when there are gaps in the information available.

If you want that job and there is a test, then you have to do well in it. So, put aside any intellectual concerns. Accept the fact that you have to work at it in order to do well. You will not get all the questions right – and if you were told the answers, you would disagree with some of them. You just have to accept the situation or alternatively withdraw your application and go and do something else. The best-scoring candidates put aside any concerns; they see the test as an opportunity to prove to the employer just how good they really are. Make sure that you adopt this winning mindset.

You may find the exercises in this book testing, boring, painful even. Unfortunately, it has to be so. To pass many psychometric tests, you have to revise your mental arithmetic and concern yourself with correct English usage. If this book did not help you do this, then it would be failing you. You must also think carefully about the features of your personality that will appeal most to a particular company and be well practised in the interpretation of data and complex passages. The aim of this book is to provide a source of practice that allows you to perfect these essential test-taking skills.

This completely revised third edition contains over 500 practice questions, an entirely new chapter on personality questionnaires, and, in response to readers' requests, harder and more reading comprehension, critical reasoning and data interpretation questions. These are all types of sub-test that have become increasingly fashionable since the publication of the first edition in 1994.

E-mail me care of Kogan Page if you use this book but need further guidance or advice. I will be happy to help. If you find a mistake, then do please take the trouble to inform me so that it can be removed at a future reprint. I and the editors have tried hard to keep them out but I am sure we have not got them all. If you find an error, try not to judge the book too harshly, as it most certainly does contain a lot of really useful practice material.

I wish you every success in the psychometric tests that you face and I dedicate this book to my children, Hope, Ella, Orlando and Allegra, and to my wife, Lorenza.

Graduate psychometric tests

I have been accepted by Procter & Gamble for a graduate position, so after 60 applications the search for a job is finally over. I am due to start work in October, which gives me time to go travelling, so I have booked a trip to the Far East, travelling to China, Vietnam, Cambodia, Thailand and ending in Singapore. It's scary to imagine but I am actually going to work.

(A graduate candidate)

Psychometric tests are multiple-choice or short-answer tests completed online or with paper and pen. Graduate candidates should concern themselves with two principal types: tests of ability and personality questionnaires. Both are designed by occupational psychologists to apply standardized scientific methods and statistical techniques to provide a numerical measurement of the extent to which you demonstrate a particular trait or set of traits. These tests are used in a host of applications: for example, to select people for redundancy, diagnose people's strengths and weaknesses, allocate staff to the most appropriate tasks and identify training need.

In recruitment – and in graduate recruitment in particular – psychometric tests are competitions; there are invariably more

applicants than positions. The ability tests are also tests of endurance. They comprise a series or battery of tests sat one after the other, often against tight constraints. To complete the whole battery can take a number of hours and when you finish, you should feel worn out. I say 'should' because you have to apply yourself and really go for it if you are going to show your full potential and stand out from the crowd.

As a graduate you are bound to come across these tests in your search for work. If you are making a whole series of applications to most or all the graduate recruitment campaigns, then it is likely that you will sit the same test a number of times.

The challenge of open and fair recruitment

A lot of good candidates are put off by tests and a lot more candidates fail to show their true potential in them. Test authors and employers go to considerable lengths to reassure us that their tests are objective and reliable and that they afford the selection of candidates with the potential to succeed in the given career or position.

From an employer's perspective, recruitment is a notoriously difficult business. Bad decisions and bad recruitment practice carry risks of damaging a business and may be open to legal challenge. To attract good applicants, many employers advertise their vacancies widely. To help to scrutinize large numbers of applicants objectively, employers use tools such as psychometric tests.

You, the candidate, will naturally try to get the best possible score and cover up any area of weakness when taking a test. The test author on the other hand must produce a test that offers as an objective an assessment of a candidate's ability while the candidate is trying to distort the outcome.

All tests should be recognized as less than perfect. This is

because before a test can predict potential job performance, there first has to be a set of criteria against which to assess each candidate. However, job performance is a complex tapestry of factors and influences that is very hard to quantify numerically. Tests therefore risk attributing to the workplace too simplistic a set of performance indicators. Things are made more complex by the fact that their content – the questions – do not exactly measure the behavioural traits under investigation and inadvertently measure traits that are irrelevant to the post.

The introduction of cut-off points to reduce the number of people who pass through to the next stage in a recruitment process adds to the imperfection. It is usual for a company to reject candidates who do not beat a particular score. Alternatively, they fix an upper limit on the number of applicants allowed through. Such cut-off points create problems because they result in the rejection of many candidates who have the potential to do the job. The fact that tests are unavoidably imperfect also means that they will inadvertently overestimate the potential of some candidates who will be allowed through to the next stage.

It is important that you realize that when test authors talk about the objectivity of their test, they mean something quantifiably different from the objectivity obtained in the natural sciences. By ‘objective’ they mean that their test is more objective than alternative recruitment and selection methods. They might mean, for example, that their test is three times more reliable at predicting job performance than, say, an interview.

The maximum benefit of practice in ability tests

Taking a psychometric test is not a matter of simply rolling up your sleeve and putting up with the discomfort of the needle while the scientist takes a sample. There is no ambiguity

attached to a blood-type classification; there is very little prospect of its changing according to the circumstances on the day on which the sample was taken. The objectivity of psychometric tests is quantifiably different. They are at best only indicators of potential. Had you not been suffering from a cold, had you been more familiar with the test conditions, been less nervous, better practised in mental arithmetic, not made that silly mistake... then you might have been classified differently. You might have passed something that, in the event, you failed.

Psychometric tests lack the certainty associated with the natural sciences. Accordingly, you, the subject, have considerable influence over the outcome. To a large extent the result will come down to the approach you take and how much you prepare.

Everyone, if they practise, can improve their test score. You can improve your score in every sort of test, even in a test where the questions are randomly selected so that they are different each time. The more interesting issue is not 'Can I improve my score?' but 'Can I improve my score sufficiently to pass something I would otherwise have failed?' The answer for most candidates is a resounding 'yes'.

Practice is almost certain to ensure that the candidate who is otherwise likely to fail by only a few marks, passes. Candidates who have little previous experience of psychometric tests can through practice demonstrate a quite considerable improvement in their score. Typically, the biggest gains are achieved quickly, and then the rate of improvement slows.

Psychometric ability tests nearly always include numerical and English usage sub-tests. Depending on your graduate course of study, these are subjects you may not have studied for many years. Practice in advance of these challenges can most definitely mean the difference between pass and fail.

Finally, practice can help you become familiar with the often unusual manner in which these questions are posed. It can help

build speed and accuracy and help deal with nervousness and improve accuracy.

How much and what kind of practice?

Practice works best with material that is as much like the real questions as possible. The employer should have sent you or directed you towards a description of the test and in many cases a source of practice questions. Study this information carefully and seek out much more, and harder, practice material that closely resembles it.

It is best if you undertake two sorts of practice. You should:

1. Practise without time constraint and in an informal relaxed situation. The aim of this practice is that you realize the demands of the questions, understand how to approach them, and gain speed and confidence in your ability to answer them.
2. Practise on realistic questions against a strict time constraint and under as realistic test conditions as you can organize. The aim of this sort of practice is to get used to answering the questions under pressure. This will help you avoid mistakes and become faster.

Over weeks, aim to undertake a minimum of 12 hours' practice. If you can obtain sufficient practice material, then practise for as much as 20 hours. If you know that you need to make major gains in respect to your maths or English, then be prepared to commit significantly more time than this on a really quite major programme of work.

Your schedule of work should look something like this:

1. Study the test description.
2. Seek out as much free relevant material as you can.

6 How to pass graduate psychometric tests

3. Find further – and, especially, harder – practice questions from sources such as this and other titles in the Kogan Page testing series.
4. Go through practice questions at your own pace.
5. Set yourself a realistic practice test against a strict time limit.
6. Score your test and spend time understanding where you went wrong.
7. Undertake more practice without time constrictions, concentrating on the types of questions that you got wrong in your first practice test.
8. Sit further practice tests under strict timed conditions.
9. Repeat stage 7 as required.

If you are having any difficulty obtaining sufficient practice material or material of a certain type, then by all means contact me via Kogan Page. If I know of any, then I will be more than happy to suggest sources.

You will find free practice tests (you have to register) at the sites www.shl.com, www.PSL.co.uk and www.efinancialcareers.com. Be aware, however, that these examples serve only to introduce the style of questions, and the questions in the real test will be quite a bit harder.

Test-taking strategies

Each kind of test requires a slightly different strategy. However, the following points about the approach that you should adopt are universal in that they apply to all psychometric tests of ability.

The best-scoring candidates are the ones who arrive prepared. You should be fully aware of the demands of each

sub-test before you attend on the day. Prior to the start of the test the computer program or test administrator will allow you to practise at a number of example questions and explain to you the question types and time allowed. You should already be entirely familiar with this information. It will all be available prior to the day on leaflets, websites or free practice test downloads. Your programme of practice should have included all types of sub-test involved.

It is critical that you approach the test with confidence in your abilities. The candidates who do best are the ones who look forward to the challenge and the opportunity to demonstrate their abilities. They realize they have nothing to lose if they do their very best and 'go for it'. Preparation is the key to this.

It is essential that you keep track of time during the test and manage how long you spend on any one question. You must keep going right up to the end and, if it is possible (a few tests do not allow you to review your past answers), take the last few minutes to check your work.

You have to practise at getting the balance between speed and accuracy right. In many tests, to do well you have to work really quickly while making the minimum of mistakes. In some tests, time is really tight.

You have to work pretty quickly in the Citigroup online numerical test, and the time limit is also tough in the numerical test used by Deloitte.

Remember, the negative effect of being under pressure to work quickly may be made worse if, understandably, you suffer anxiety or nerves. Be prepared for the fact that a significant change in pace may occur between sub-tests. There are examples where you have plenty of time in one sub-test and then this is followed by another in which time is really tight. Getting the

pace right and being able to respond to a new challenge during the test takes practice.

Everyone gets some answers wrong. In the vast majority of tests it is better that you risk getting some questions wrong, so do attempt every question rather than double-check every answer and be told that you have run out of time before you have finished.

If you hit a difficult section or question, don't lose heart – just keep going. You may well find that you come to a section of questions in which you can excel.

Educated guessing is often worthwhile and worth practising. If you are unsure of the answer to a multiple-choice test, consider all the suggested answers and try ruling some of them out as wrong. That way you can reduce the number of suggested answers from which to guess and, hopefully, increase your chance of guessing correctly. It is unlikely to help your score if you simply guess from the suggested answers in a random fashion. This is because many tests penalize wrong answers or unanswered questions. To best manage penalties for wrong or unanswered questions, you need to perfect time management during the test, and when you cannot answer the question, then exercise educated guessing.

In numerical tests, practise estimating answers. In some instances you can modify the sum to make it a more convenient, faster calculation and then look to the suggested answers to identify the correct one.

A summary of research findings

A study of some of the literature on the effects of coaching highlighted the following findings. I summarize them so that you can make your own assessment as to the likely benefit of practice and better understand the principal issues believed to determine the value of practice.

- Everyone can improve their score if they practise.
- Individuals with incomplete educational backgrounds are likely to benefit most from coaching.
- Those who have no, or little, previous experience of tests show an improvement in performance about twice that shown by those who have taken a test before.
- Improvements in scores are obtained by experiencing material similar to that which occurs in the real test.
- Practice with similar material under realistic test conditions produces the best results.
- Most of the improvement is gained quickly; then the rate of improvement slows.
- The effects of test coaching appear highly specific in that there is little transfer of benefit to other types of test.
- Big individual differences are found in the effect of coaching.
- Greatest improvement in test performance is obtained not from coaching but from education (over a long time-frame).
- Graduates who have not studied maths or English language for a number of years can significantly improve their test scores through practice in these important types of sub-test.

Personality and attitudinal questionnaires

Psychometric Services Ltd (PSL) produces a whole range of online and pen and paper personality questionnaires with titles including:

- Occupational Personality Inventory
- Dynamic Personality Questionnaire
- Motivational Questionnaire
- Customer Service Questionnaire
- Advanced Sales Questionnaire

You may well come across the PSL questionnaires (and ability tests). PSL has a very extensive client list, including for example Cadbury Schweppes, HMV, Lloyds TSB and Toyota, to name but a few of the many hundreds of national and international companies PSL has as its clients.

Every organization will require graduate applicants to complete a bundle of forms. Very often these include some type of questionnaire. It will comprise a series of questions to which

you must indicate your attitude. You are required, for example, to indicate whether you agree or disagree, agree or disagree strongly, or neither agree nor disagree with each statement. Increasingly these questionnaires are completed online but they are still sometimes done with pen and paper.

It is common for the same issue to be returned to at a number of points in the questionnaire and even the same question to be repeated. The test author uses this quite annoying strategy to investigate the consistency of your responses.

It is important that you realize these questionnaires are used to filter out candidates whose responses suggest they will not fit well in the organization's preferred style of working. Many, many candidates complete them in haste and give far too little thought to their function and significance. From now on, take these questionnaires far more seriously. They may well represent the stage in the recruitment process at which the largest numbers of applicants are rejected.

Personality questionnaires in which there is strictly speaking no right or wrong answer

Most of the questions in personality questionnaires do not have a definitive right or wrong answer. The preferred answer depends on the company using them and the sort of profile of person it is looking for and the responses that it considers most suitable. You should therefore always answer these questions with the job role and organization at the fore of your mind. Allow me to illustrate the point with the following mini-questionnaire.

Practice for personality questionnaires

Consider and answer the following example questions (do not refer to a particular organization or role):

12 How to pass graduate psychometric tests

When I cook a meal I prefer to follow the recipe exactly	Agree	Disagree
--	-------	----------

I try to get others to do a job the way I think it should be done	Agree	Disagree
---	-------	----------

I always try to include others in my plans	Agree	Disagree
--	-------	----------

I try to strongly influence other people's actions	Agree	Disagree
--	-------	----------

I find myself the dominant person in many social situations	Agree	Disagree
---	-------	----------

Now answer the same questions but imagine you were applying and want to work for a company needing 'a safe pair of hands', a candidate capable of handling difficult situations diplomatically.

When I cook a meal I prefer to follow the recipe exactly	Agree	Disagree
--	-------	----------

I try to get others to do a job the way I think it should be done	Agree	Disagree
---	-------	----------

I always try to include others in my plans	Agree	Disagree
--	-------	----------

I try to strongly influence other people's actions	Agree	Disagree
--	-------	----------

I find myself the dominant person in many social situations	Agree	Disagree
---	-------	----------

Finally, answer the same questions but imagine yourself applying for a choice role that requires a person driven to

succeed in a highly competitive ‘dog eat dog’ market in which success only comes to those prepared to work extremely hard and who are comfortable with a degree of risk.

When I cook a meal I prefer to follow the recipe exactly	Agree	Disagree
--	-------	----------

I try to get others to do a job the way I think it should be done	Agree	Disagree
---	-------	----------

I always try to include others in my plans	Agree	Disagree
--	-------	----------

I try to strongly influence other people’s actions	Agree	Disagree
--	-------	----------

I find myself the dominant person in many social situations	Agree	Disagree
---	-------	----------

Now compare your answers. On your second attempt you should have answered the questions very differently from the third. A company looking for ‘a safe pair of hands’ might prefer the person inclined to stick to the recipe. A diplomatic approach does not normally involve trying to strongly influence people or always getting others to do the job your way. This contrasts strongly with a company operating in a highly competitive market. Such a company might well prefer the person inclined not to follow the recipe, and could well be attracted to the dominant personality.

It may be that your first response to these questions, the response in which you did not have a role or organization in mind, is different again, but realize that if you answer these questions outside of the context – that is, without reference to the role and organization to which you are applying – then you may well be failing to present yourself in the best light and risk rejection at the first hurdle from a job you want.

All this does not mean that you should not answer these questionnaires truthfully. You should, and you should be prepared to make responses that you realize may not be the preferred response. In any event, a handful of low-scoring responses are unlikely to result in your rejection. The point is that you should emphasize the bits of your personality that best fit the role and organization. This is no different from the way in which you might customize a CV, emphasizing particular attributes to best suit a particular career, or answer an interview question differently depending on the context.

Practice at 40 more personality questionnaire statements

Below you will find 40 typical examples of the sorts of questions that occur in personality questionnaires. You should be aware that in a real test the questionnaire is likely to be specific to a particular industrial sector or a particular grade of worker, or to investigate a particular trait in greater detail, whereas these practice questions are necessarily general to any role or sector and across many traits.

The statements are organized under headings of the principal categories of behaviour investigated by questionnaires. Use these questions to practise for a real questionnaire. Remember to keep to the fore of your mind the type of role and organization in which you would prefer to work. Practise being consistent in your responses. Obviously it is not possible for me to give a correct answer to these questions because it would depend on the role and organization to which you would like to apply. However, I have offered explanations of the sort of conclusion that might be drawn from your response.

A useful tip is that it is best to avoid too many 'neither agree nor disagree' responses in a real questionnaire as this could be taken to conclude that you find it difficult to commit yourself.

Also take care not to suggest that you have too many strongly held opinions. (This would only apply to a questionnaire that offered the option of responding 'agree strongly' or 'disagree strongly'.)

Usually, no time limit is applied to these questionnaires, so allow yourself as long as you wish to respond to the following:

- S1 I sometimes let small things upset me more than they should.
 Agree Neither agree nor disagree Disagree
- S2 I do not find regulations and written procedures restrictive.
 Agree Neither agree nor disagree Disagree
- S3 It's human nature to be lazy whenever possible.
 Agree Neither agree nor disagree Disagree
- S4 Working life unavoidably involves dealing with the unforeseen.
 Agree Neither agree nor disagree Disagree
- S5 I would not describe myself as someone who worries too much about things.
 Agree Neither agree nor disagree Disagree
- S6 If you want to get ahead of your team-mates, then keep your cards close to your chest.
 Agree Neither agree nor disagree Disagree
- S7 I have a tendency to feel responsibility for things going on at work even if they are not a part of my job.
 Agree Neither agree nor disagree Disagree

- S8 In order to manage people well you have to watch over every detail.
Agree Neither agree nor disagree Disagree
- S9 I find it hard to cope when a whole series of things go wrong.
Agree Neither agree nor disagree Disagree
- S10 It is not always a matter of fun, and harmless, to be humorous at work.
Agree Neither agree nor disagree Disagree
- S11 I try to be the dominant person when I am in a group.
Agree Neither agree nor disagree Disagree
- S12 At work I get bored when I undertake familiar tasks.
Agree Neither agree nor disagree Disagree
- S13 It is advisable to plan for the worst case even if this delays slightly the implementation of new products.
Agree Neither agree nor disagree Disagree
- S14 I am only patient with people if they are polite and considerate.
Agree Neither agree nor disagree Disagree
- S15 It is much more effective to communicate ideas orally than in writing.
Agree Neither agree nor disagree Disagree
- S16 I can't rely on my own initiative and am much happier as a part of a team.
Agree Neither agree nor disagree Disagree

- S17 It is normal that your working life should interfere with your busy social life.
 Agree Neither agree nor disagree Disagree
- S18 To succeed, one has to break with the past and experiment with the new.
 Agree Neither agree nor disagree Disagree
- S19 I can talk with ease about how I feel.
 Agree Neither agree nor disagree Disagree
- S20 I am more objective in the inferences that I draw than most people I know.
 Agree Neither agree nor disagree Disagree
- S21 Success follows a detailed understanding of the market-place.
 Agree Neither agree nor disagree Disagree
- S22 What I do in my own time is none of my employers' business.
 Agree Neither agree nor disagree Disagree
- S23 I often suspect that people who appear friendly are in fact the opposite.
 Agree Neither agree nor disagree Disagree
- S24 I would rather work in a laboratory helping to invent something than in the sales team trying to sell it.
 Agree Neither agree nor disagree Disagree
- S25 I like people to invite me to join in with their activities.
 Agree Neither agree nor disagree Disagree

- S26 It is sometimes clever to make a sarcastic remark.
Agree Neither agree nor disagree Disagree
- S27 If I worked in advertising I would rather be involved in the accounts of sportspeople or celebrities than in those of multinational companies.
Agree Neither agree nor disagree Disagree
- S28 Some tasks do not need to be done as carefully as others.
Agree Neither agree nor disagree Disagree
- S29 You can have too many new initiatives, especially if, like buses, they all tend to come along at once.
Agree Neither agree nor disagree Disagree
- S30 I find it hard to start a conversation with someone I do not know.
Agree Neither agree nor disagree Disagree
- S31 I just can't see how a 'no-blame' culture can be good for business.
Agree Neither agree nor disagree Disagree
- S32 I most definitely do not see my ideal role as one of providing counsel and impartiality.
Agree Neither agree nor disagree Disagree
- S33 It is possible to demonstrate good manners in most but not all situations.
Agree Neither agree nor disagree Disagree
- S34 I rarely have time to read it all but I like to be copied into all correspondence.
Agree Neither agree nor disagree Disagree

- S35 It is far more important to be judged decisive than to be judged competent.
Agree Neither agree nor disagree Disagree
- S36 Good leadership is about boldness far more than listening skills.
Agree Neither agree nor disagree Disagree
- S37 I would not be discouraged by a set of stretching performance indicators against which I would be assessed.
Agree Neither agree nor disagree Disagree
- S38 I work at my best when I can keep distractions to a minimum.
Agree Neither agree nor disagree Disagree
- S39 I let others decide what to do.
Agree Neither agree nor disagree Disagree
- S40 I absolutely refuse to accept failure.
Agree Neither agree nor disagree Disagree

Attitudinal questionnaires to which there is most definitely a wrong answer

You are most likely to come across an attitudinal questionnaire if you apply to, for example, a police or other emergency authority, or public service organization generally.

This fast-growing part of the questionnaire market typically involves a mix of statements, many of which you and the employer will be in complete agreement over, but in among them will be a statement that probes your attitude towards, for

example, honesty, colleagues, customer care, equality of opportunity and health and safety.

With these questions it is quite possible for your application to be rejected on the basis of a single wrong response. This might occur if, for example, you agree with a statement that supports direct racial discrimination in the workplace or asserts that violent or gross misconduct is acceptable at work. More likely the questions will be subtle enough to require a pattern of wrong responses before a rejection is triggered.

Examples

Your response to these statements is very unlikely to differ depending on the company to which you are applying or the role in question. From the test-taker's perspective it is this feature that makes this type of questionnaire so different from the personality questionnaires. Consider the following 10 examples. Be careful when the statement involves a negative:

S1 I would not really consider it any of my business if I witnessed a colleague stealing company property.

Agree Disagree

S2 At some point we all make mistakes and what counts is that we work together to correct them.

Agree Disagree

S3 It's not obvious that people should refrain from using bad language at work.

Agree Disagree

S4 You just know that there are some sorts of people that you are going to get on better with.

Agree Disagree

- S5 I am not the sort of person who lets things that upset me build up until I blow my top.
Agree Disagree
- S6 If it were not a condition of my contract of employment, then I might not agree to a request from my employer that I undertake a medical examination by a qualified doctor of medicine.
Agree Disagree
- S7 Someone who is off sick with a stress-related illness is unavoidably putting more stress on everyone else who has to go to work and do that person's job as well as their own.
Agree Disagree
- S8 Most employers expect employees to pay lip service to equality of opportunities but at the end of the day it is not going to help get the job done.
Agree Disagree
- S9 I have always been comfortable with being told what to do.
Agree Disagree
- S10 When I find that I have a different opinion from others I prefer to end the discussion or to discuss something else.
Agree Disagree

You will find a personality test comprising 130 practice questions in *The Graduate Psychometric Workbook* and a further 100 practice questions in *The Ultimate Psychometric Test Book*, both published by Kogan Page.

Great candidate except for the maths!

Research indicates that one in six graduates lack confidence in the use of percentages, averages and the interpretation of tabulated data.

These findings are hardly surprising, given that a lot of graduates leave higher education having not studied maths for many years. If this research describes you, then you need to revise forgotten rules and build up your confidence, speed and accuracy. You may well require more material than is contained here and you can obtain more from the following titles in the Kogan Page Testing list:

How to Pass Numeracy Tests, 3rd edition

The Numeracy Test Workbook

How to Pass Numerical Reasoning Tests, 2nd edition

If you are a business studies graduate or have completed a course of study that required you to be super-numerate, then you may be able to skip the early parts of this chapter. Before you do, you may want to work through the data interpretation

test towards the end. If you face a test in which you are not allowed a calculator, you will find this chapter ideal for revision. You can obtain further advanced numerical questions in the following Kogan Page Testing titles:

How to Pass Advanced Numeracy Tests
The Graduate Psychometric Test Workbook
The Advanced Numeracy Test Workbook

There are very few graduate recruitment schemes that do not include a psychometric test of your numerical skills. If you are applying to one of the major professional services firms, accountancy firms or banks, you can be sure that the process will include a challenging numerical test.

The company Ernst & Young currently requires you to sit two numerical tests! The first is online, and if you pass that, there follows a second, invigilated pen and paper test.

In many graduate numerical tests a calculator will be provided. However, if you are applying to a great many organizations, you should realize that a calculator is not always provided.

Deutsche Bank is currently using a numerical test in which a calculator is not allowed.

Even when a calculator is given, your mental arithmetic needs to be good enough for you to know when you have made a mistake. So, practise lots and get your mental arithmetic back into shape. Remember, you may well have to complete a test without a calculator. For this reason, the practice material in this chapter has been designed to be completed without a calculator. You will find below, at the intermediate level:

24 How to pass graduate psychometric tests

1. A diagnostic exercise of key competencies to help you establish the extent to which you need to practise and the areas in which you need to practise most.
2. A glossary of key terms so that you can revise the key operations.

At the intermediate and advanced level you will find:

3. Practice questions and practice timed tests. These questions and tests get progressively harder and introduce the level of questions that you can expect to face in a real test.

At the advanced level:

4. The chapter concludes with a data interpretation test representative of the level of numerical test that you can expect in a graduate recruitment campaign for a financial role.

A key skills diagnostic exercise

Allow yourself 25 minutes in which to complete the following 33 questions. Do not use a calculator. Most questions have a short answer; a few require you to select from a number of suggested answers.

Addition

1. Find the sum of 79,004, 24, 325 and 647.

Answer

2. A company representative submits a travel claim form comprising the following:

Monday	105 miles	Thursday	144 miles
Tuesday	43 miles	Friday	12 miles
Wednesday	87 miles		

What is the weekly total number of miles?

Answer

3. A study of a family's expenditure found that each week on average they spent the following: \$38.60 on food, \$57.00 on accommodation, \$14.20 on entertainment, \$18.70 on heat and light and \$9.00 on clothing. Excluding entertainment, what is the total spent (take 100 cents = \$1)?

Answer

Subtraction

4. What is the difference between 373 and 3,298?

Answer

5. Subtract 10,303 from 60,002.

Answer

6. The period sales figures for your department are illustrated in the table against your targets. How many unit sales must you make in the last period in order to achieve your overall target?

Answer

<i>Period</i>	<i>Sales achieved</i>	<i>Targets</i>
1	24	30
2	13	20
3	17	22
4	20	22
5	19	22
6		20

Multiplication

7. Multiply 35 by 68.

Answer

8. A buyer agrees to pay 16 cents (take 100 cents = \$1) per unit for a lot that totals 103 units. What is the total cost of the purchase? Express your answer in dollars and cents.

Answer

9. A machine can operate at 120 revolutions per minute. How many times will it rotate in half an hour?

Answer

Division of whole numbers

10. Divide 185 by 5.

Answer

11. Divide 2,115 by 9.

Answer

12. British Gas sends out 27 million bills a year. It has made a deal with the Royal Mail, which delivers the bills for £2,700,000. How much does it cost British Gas to deliver each bill (£1 = 100 pence)?

Answer

Fractions

13. $\frac{1}{3} + \frac{2}{9} + \frac{7}{12} =$

Answer

14. $3\frac{5}{8} - 1\frac{3}{4} =$

Answer

15. A railway wagon carries $20\frac{1}{8}$ metric tonnes of flour in $12\frac{1}{2}$ kg bags. How many bags of flour can be loaded onto the wagon? (Note that 1 metric tonne = 1,000 kilograms.)

Answer

Decimals

16. Add 3.36 and 4.60 and then deduct 2.3 from the total.

Answer

17. Convert $\frac{1}{6}$ into decimals.

Answer

18. Multiply 3.7 by 4.83.

Answer

Ratios

19. Parked in a street there are 14 cars and 4 motorcycles.
What is the ratio of cars to motorcycles?

Answer

20. The ratio of car drivers to cyclists in a city is found to be 4:1. How many cyclists were counted in the survey if the sample totalled 2,500?

Answer

21. A fuel mixture comprises the ratio 14 parts fuel to 1 part oil. How much oil will be present in 9 litres of fuel mixture?
(Note there are 100 centilitres in 1 litre.)

Answer

Averages

22. Find the average of 7, 12, 14 and 16.

Answer

23. A shop sold 3 watches at £16, a ring at £30 and 4 travelling alarm clocks at £9 each. What was the average sale price (£1 = 100 pence)?

Answer

24. To pass an exam you have to average 60 marks across four papers. After three papers a candidate's score is averaging 52. What mark must the candidate achieve in the final paper in order to pass the exam?

Answer

Percentages

25. Find 43% of 500.

Answer

26. A pair of shoes is normally priced at £37. What will be the sale price if a 25% discount is offered (£1 = 100 pence)?

Answer

27. An invoice totals £5,000 and includes VAT at 17.5%. How much was the invoice made out for, excluding VAT? (£1 = 100 pence; round your answer up to the nearest whole penny.)

Answer

Basic algebra

28. A receiver has to share a sum of money between three creditors. Creditor X is to receive £1,000 more than creditor Y. Creditor Z is to receive three times as much as creditor Y. Devise a linear equation which allows you to establish that creditor X will receive £1,600 if creditor Z is paid £1,800.

Answer

29. A shop buys watches for £10 and sells them for £16. What is the percentage gross profit?

Answer

30. If $x + y = 3$, then $2x + 2y$ is:

4 2 6 8 Cannot be determined

Answer

31. If $4a = 3b$ and $6b = 0$ then:

$a = \frac{3}{4}$ $a = b$ $a = 3$ and $b = 4$ $a/b = \frac{4}{3}$ $b/a = \frac{3}{4}$

Answer

32. If $3a + b = 6$ and $2a + 2b = 12$, then $2b - 2a$ is:

8 10 6 18 12

Answer

Sequencing

33. 2, 5, 8, 11, ?, 17

Answer

34. 3, 4, 12, 48, ?

Answer

An interpretation of your score in the diagnostic exercise

A score of 30 or above

If you face one of the high-level numerical tests produced by SHL or PSL because you are applying for graduate traineeships in financial departments in the leading international consultancies or banking, then this is the only score that you can be content with. To excel in these tests you must demonstrate a grasp of the fundamental operations in maths and answer questions such as these with confidence, accuracy and total familiarity.

Move on to the tests towards the end of this chapter and practise under realistic conditions.

You will find further advanced-level practice in the Kogan Page title *How to Pass Advanced Numeracy Tests*.

A score of 20–29

Establish which of the key operations you got wrong and start

a programme of practice that focuses most on these operations. You will find many suitable questions in this title but you will need more practice material than is contained in this volume. So, source lots more practice questions. You will find hundreds more in the following Kogan Page books:

The Graduate Psychometric Test Workbook
The Ultimate Psychometric Test Book

Keep practising until you have fully revised these essential operations. Be prepared to commit a quite considerable amount of time to your programme of revision. Once you feel that you have mastered the challenge then move on to take the practice tests towards the end of this chapter.

A score below 20

Don't attend an ability test of your numerical skills until you have completely revised the key mathematical operations in this book. This may require a quite considerable commitment in terms of time and effort. You will need many more questions than are contained in this title. You can find hundreds of suitable questions in the following Kogan Page titles:

How to Pass Numeracy Tests, 3rd edition
The Numeracy Test Workbook
How to Pass Numerical Reasoning Tests, 2nd edition
How to Pass Selection Tests

Once you have completed these, you can move on to the more difficult material found in this chapter and the recommended titles for candidates who scored 20 or above. Don't give up; just keep practising. This is definitely something you can learn. It is only a matter of time and commitment.

Glossary of key terms and methods

If it is some years since you studied mathematics, then it is important that you remind yourself of the meanings of key terms and methods.

The following glossary of terms is intended only as a reminder. The suggested methods are by no means the only way to work the calculations. If you rely on another method, then it is probably best if you stick with it.

Make sure that you can operate quickly, accurately and with confidence the following rules and methods.

Addition

If the numbers have the same sign (positive or negative), then you add them together and use the same sign in the number. If the numbers have different signs, then apply the rule that $+ -$ is the same as $-$. For example:

$$2 + -6 = -4$$

$$16 + -2 = 14$$

If you subtract a smaller number from a larger one, the answer will be positive. If you subtract a large number from a smaller one, the result will be negative.

Angle

Angles are measured in degrees and record the amount of turn. A right angle has 90 degrees, an obtuse angle is greater than 90 but less than 180 degrees, and a reflex angle is greater than 180 degrees. Angles on a straight line add up to 180 degrees, while angles from a point add up to 360 degrees.

Area

Area is a two-dimensional measurement. To work out the area of a square, you multiply the length of one side by itself. All

areas are measured in squares, eg square centimetres. To establish the area of a rectangle, multiply length by width. The area occupied by a triangle is established by multiplying its height by half the length of its base line.

Average

The average, or arithmetic mean, is found by adding up all the figures and dividing the total by the number of figures. *Average* differs from *mode*, which is the item of data that occurs the most often, and *median*, which is the figure or item of data that is in the middle once all the items have been put into a specific order.

Bar chart

A bar chart is a visual representation of data that allows the viewer to make comparisons between the frequency or quantity of items. It is used when the horizontal scale is simply a list. The bars are of equal width; the frequency or quantity is illustrated by the height of the bar.

Brackets

When there appear to be several ways in which to proceed with a calculation, to ensure that the calculation proceeds in the correct order, the items to be calculated first are enclosed within brackets. Work out the parts in brackets first. Brackets are sometimes referred to as a 'first priority'. A second priority is multiplication and division, which must be done before the third priority: addition and subtraction.

Circle

The circumference of a circle is the outer edge and is calculated with the equation $\pi \times \text{diameter}$. A *cord* is any straight line drawn from one part of the circumference to another. When a circle has a cord drawn on it, the circle is divided into two *segments*. A straight line taken from the circumference to the

centre is called the *radius*; and a straight line taken from one part of the circumference to another, passing through the centre, is called the *diameter*. The area of a circle is equal to $\pi \times$ the square of its radius.

Congruency

If shapes, for example squares or triangles, have the same angle and all the lengths are the same, they are said to be *congruent*. Shapes are said to be *similar* if the angles are the same and the ratios of all the corresponding lengths are equal.

Cube

A cube has six square faces at right angles to each other. The cube of a number is established if the number is multiplied by itself twice: for example, the cube of 5 = $5 \times 5 \times 5$ (answer 125). The cube root of 125 is therefore 5. The sign for cube root is $\sqrt[3]{\quad}$.

Decimal number

A decimal number has a decimal point. The point serves to separate the whole number from the decimal fraction. Some decimals are recurring. Decimal places after the point represent, respectively, tenths, hundredths, thousandths, and so on.

Distance

To calculate distance, multiply rate of travel by time.

Division

It is unusual in a psychometric test to have to undertake long division, especially if the sum is awkward. Some test publishers, however, may want to establish whether you are aware of short cuts and patterns in mathematics. For this reason it is worth looking to see whether the question has been formed so as to test, for example, whether you realize one of the following:

- A number is divisible by 2 if the last digit is even.
- A number is divisible by 5 if its last digit is either 5 or 0 and by 10 if its last digit is 0 (to divide by 10, simply take off the 0).
- A number is divisible by 3 if the sum of its digits is divisible by 3.
- A number is divisible by 9 if the sum of its digits is divisible by 9.
- A number is divisible by 4 if the number formed by the last two digits is divisible by 4.
- A number is divisible by 8 if the number formed by the last three digits is divisible by 8.
- A number is divisible by 6 if it is also divisible by both 2 and 3.

Exponent

An exponent is the power to which something has been raised. For example, in the term 10 to the power of 2 the exponent is 2, and this is expressed as 10^2 .

Factor

A factor is a whole number that will divide into another number exactly. The factors of, for example, 8 are 1, 2, 4 and 8.

Factorizing

If you factorize an equation or mathematical expression, you separate it into bracketed parts which, if multiplied together, will give that expression.

Fractions

A fraction is a part of a whole number. You need to be able to work with both decimal and vulgar fractions. Decimal fractions are described in the entry entitled 'decimal number'. Vulgar fractions use whole numbers one above the other; the

lower number is called the denominator and the upper number is called the numerator. An improper fraction is one where the numerator is bigger than the denominator.

Fractions can be changed to another, equivalent fraction and still have the same value. You should always finish a calculation by expressing a fraction in its lowest term.

To change a fraction to a lower equivalent you look to divide both the numerator and denominator by the same number. This is called *cancelling*. If the number is even, you can always divide by 2. Sometimes you cancel more than once before you arrive at the lowest equivalent.

To add or subtract fractions you need to ensure that all the denominators are the same. In the example

$$\frac{1}{2} + \frac{3}{8} = ?$$

you find the common denominator, which is 8, and convert to eighths

$$= \frac{4}{8} + \frac{3}{8}$$

The answer is $\frac{7}{8}$.

To multiply fractions, make sure that any mixed numbers (whole numbers and fractions) are converted into improper fractions and then multiply all the numerators and all the denominators together.

To divide fractions, change any mixed numbers into improper fractions and then turn the fraction by which you are dividing upside down (invert it) and multiply.

Frequency

Frequency is the number of times an event occurs.

Generalization

If we find a pattern and express it using algebraic expressions, we are said to have *generalized* it.

Graph

A graph is a diagram comprising two reference lines, called axes, at right angles to each other. A scale is marked along each axis. Graphs are used to show a relationship between two quantities. Before you begin to calculate with figures taken from a graph, take care to establish that the units are comparable and that you are looking in the correct column or line. See x and y .

Histogram

A histogram is similar to a bar chart except that it is the areas of the bars that represent the frequency or quantity rather than the length of the bars.

Inequalities

Inequalities are signs used to indicate relative size. Examples you must understand are:

> means 'greater than'

< means 'less than'

Interest: compound and simple

You may well face questions that require you to work out simple or, more likely, compound interest.

Simple interest involves a quantity of money and a rate of interest. You simply multiply the amount of money by the rate of interest and divide by 100 to establish the interest earned.

Compound interest is the type most banks offer. The interest is added to the amount saved and you then receive interest on both the amount saved and the interest earned. The total compound interest can be roughly estimated by using the following formula, which if applied will save time. Try it and decide its value for yourself:

$$\text{Final amount} = P \times (R/100)N + P$$

where P = amount initially invested (the *principal*), R = percentage rate of interest and N = number of years for which the investment is made.

Mean, median and mode

See *Average* (above).

Multiplication

Make sure the units of each number are underneath each other. To multiply any whole number by 10, 100, 1,000 and so on, simply add a 0 in the case of multiplying by 10, two 0s in the case of 100, etc.

To multiply decimals, ignore the decimal point and proceed as if the numbers were whole. When you have finished multiplying, count for each decimal how many figures (including 0s) there are to the right of the decimal point and add them together. The total gives you the number of decimal figures to the right of the point you must have in your answer.

Percentage

Percentage is a way of describing parts of a whole. One per cent (1%) represents one out of a hundred. To calculate, for example, 25% of 300 we calculate:

$$300 \times \frac{25}{100} = 75$$

Percentage as a fraction. A percentage is a fraction with a denominator of 100. To express a percentage as a fraction, all you need do is express it as its lowest term.

Percentage as a decimal. To change a percentage into a decimal, all you need do is divide it by 100. You can do this by moving the decimal point two places towards the left.

Changing fractions and decimals into percentages. Multiply by 100.

Percentage decrease and increase. To work out a percentage decrease or increase, you compare the decrease or increase with the original amount.

If the amount is to be decreased by, for example, 20%, then we need to calculate $100 - 20 = 80\%$ of the total. Likewise, if we want to increase an amount by, say, 10%, we have to calculate 10% of the original amount.

To work out 80% of £14 we use the following method:

$$(80/100) \times 14 = \text{£}11.20$$

Value added tax and profit and loss

Test questions of percentage are often concerned with value added tax (VAT) or profit and loss.

VAT

Ensure that you are able to work out the amount of VAT to be charged and the amount of VAT contained in an inclusive sum. The first of these is easy. To work out the VAT contained in a total, use the following method:

Treat the inclusive sum as 100% + the percentage rate of VAT. Then work out 100% of the total.

For example, how much VAT (charged at 17.5%) is contained in an inclusive sum of £47? To answer this, take $47 = 117.5\%$. Now find 100%: $1\% = 47/117.5 = 0.4$, so $100\% = 40$. So the VAT is $\text{£}47 - \text{£}40 = \text{£}7$.

You can also find VAT by multiplying the total, inclusive of VAT at 17.5%, by 7.47.

Profit and loss

We buy goods at one price and sell them at another. Test questions often expect profit and loss to be expressed as a percentage. The way to approach these questions is as follows:

1. Work out the cash profit or loss.
2. Express this as a fraction of the original (buying) price.
3. Convert this fraction to a percentage.

Pi

The sign for pi is π and is found by dividing the circumference of a circle by its diameter.

Pictogram

A pictogram is a representation of information which uses pictures to denote the frequency or quantity.

Pie chart

A pie chart divides a circle into sectors the size of which represents a portion of the whole.

Powers

See *Exponent*.

Priorities

See *Brackets*.

Probability

The likelihood of an event happening can be expressed. The comparison can be shown as, for example, a fraction, percentage or ratio (see below). If something is considered impossible, then the probability is 0; if there is an even chance of its happening, it is expressed as $\frac{1}{2}$; and if an event is a certainty it is expressed as 1. The probability of a dice being rolled and its coming to rest with the number 3 at the top is $\frac{1}{6}$.

Quartiles

If you have a graph demonstrating the cumulative frequency of a quantity, it may be divided into equal quarters, and these are called quartiles of a distribution. Quartiles are added to the graph by dividing the total frequency into equal groups. You have an upper and lower quartile and the median.

Ratio

Ratio is a comparison of quantities. Like fractions, they can be simplified or cancelled down. For example, if you are told that the ratio of men to women is 25:50, this can be simplified to 1:2.

Running totals or cumulative frequency

A running total allows you to realize the total to date and find out the median and the quartiles of distribution. If drawn on a graph, the cumulative frequency will form a distinctive curve known as the *ogive*.

Sequence tests

For many candidates, sequencing tests offer the chance to show considerable improvement through practice. They really are a lot easier than they at first seem.

A sequence is offered with one of the set missing, which you have to identify. The sequence can start and end at any point. The most common types are as follows:

Addition

The sequence for adding the number 8 can be presented as:

480, 488, 496, 504, 512, 520, 528, and so on

Subtraction

If a sequence is decreasing from left to right, it may be the result of subtraction. Subtraction of the number 6 can be illustrated as follows:

540, 534, 528, 522, 516, 510, 504 ...

Multiplication

This common type of sequence is constructed as a result of multiplying the same number each time. The sequence derived by the multiplication of 3 is, for example, as follows:

2, 6, 18, 54, 162, 486 ...

Division

In a way similar to multiplication, a sequence can be constructed as a result of division. For example, division by 5 each time produces the following sequence:

37,500, 7,500, 1,500, 300, 60 ...

Add two previous terms

This type of sequence is generated by adding the two previous numbers to obtain the next in the series. For example:

1, 4, 5, 9, 14, 23, 37 ...

Multiply two previous numbers

Related to the previous example, this sequence is obtained by multiplying the two previous digits:

3, 4, 12, 48, 576 ...

Alternating signs

A number may have either a positive or a negative sign, and the sign of the numbers that make up a sequence may be alternated in an attempt to make it less recognizable. For example:

2, -4, 8, -16, 32, -64, 128 ...

Addition of two common sequences

Take the sequence:

1, 2, 4, 7, 11, 16, 22, 29, 37, 46 ...

It is produced by adding a term from the sequence 1, 2, 3, 4, 5, 6, 7, 8, 9 to the previous number. To get 2 we add 1 to the first term, to get 4 we add 2 to 2, to get 7 we add 3 to 4, and so on.

This type of sequence is produced as a result of adding a number to the first term to get the second but adding a different number to get the fourth. You work out what number to add each time because these numbers belong to another sequence.

Hidden series

Sometimes the test author will try to hide a sequence by presenting it in a misleading manner. For example:

123, 456, 789, 101, 112, 131, 415, 161, 718 ...

All the test author has done in this instance is present the most common sequence of all in a different way. The sequence is the numbers 1–18.

Sequences worth remembering

The following sequences come up often and are worth committing to memory if they are not familiar:

The power of 2 sequence	2, 4, 8, 16, 32, 64, 128, 256 ...
The power of 3 sequence	3, 9, 27, 81, 243, 729 ...
The square of numbers	1, 4, 9, 16, 25, 36, 49, 64, 81, 100 ...
A sequence of factors	1, 2, 6, 24, 120, 720 ...
The cubes of numbers	1, 8, 27, 64, 125, 216 ...
The power of 4 sequence	4, 16, 64, 256, 1024 ...
The sequence of prime numbers	1, 2, 3, 5, 7, 11, 13, 17, 19, 23, 29 ...

Set

A set is a collection or class of items that have something in common. In mathematics a set is indicated by this type of bracket { }. An example of a set (in this case a finite set) is the set of positive numbers to 10: {1 2 3 4 5 6 7 8 9 10}.

Square root

The square root of a number is that number which, if multiplied by itself, would give your original number. For example, the square root of 25 is 5 because $5 \times 5 = 25$. Every number has both a positive and a negative square root. The square roots of 25 are both 5 and -5 (remember, if two negative numbers are multiplied, they equal a positive number).

Subtraction

There are two widely practised methods of subtraction. I will illustrate them with the following example:

$$\begin{array}{r} 93 \\ - 27 \\ \hline 66 \end{array}$$

In method A, you would borrow 10 from the 9 to make the 3 = 13; the 9 would then become an 8. In method B, we would again add 10 to the 3 to make it 13 but this time we would also add 10 to the 2 on the bottom line to make it 3.

Stick with whichever method you were taught and practise to make sure you are accurate and quick.

Triangle

The sum of the inside angles of a triangle is always 180 degrees. An equilateral triangle is one with three equal sides and three equal angles, all 60 degrees. A right-angled triangle is one with a right angle. An isosceles triangle is one with two equal sides and two equal angles.

Volume

Volume is the measurement of the three-dimensional space occupied by a solid. It is quantifiable in cubic measurement, for example cubic metres.

There are formulae for finding volume in all the regular

shapes. To find the volume of a box, for instance, you multiply length by breadth by height. To find the volume of shapes that have vertical sides of equal lengths, for example a cylinder or a triangular prism, you multiply the area of the base by the height.

Whole numbers

Examples of whole numbers are 0, 1, 2, 3, 4, and so on. A whole number that is divisible by 2 is called an even number. A number not divisible by 2 is an odd number. Note that a number is said to be divisible only if a second number divides into it without any remainder.

x and y

The horizontal (x) and vertical (y) axes on a two-dimensional graph are referred to as the x and y axes.

Sixty practice number problems

This style of question has been around for decades and still remains a firm favourite. If the test you face comprises this style of question, then make sure that you keep practising until you are really quick and get the vast majority of these questions right. Even if you do not face number problems, use this style of question to revise your command of mathematical operations.

1. A till roll is 10 metres long while the average till receipt is 8 centimetres long. How many customers can be served before the till roll needs to be changed?

Answer

2. A store serves 6,000 customers a day. Given that the average till receipt is 8 centimetres long and a till roll is 10 metres long, how many till rolls will be used each day?

Answer

3. A household's water bill is £240 and is charged at 15 pence a gallon. How many gallons of water does the household use?

Answer

4. A household's water bill of £240 is to increase by 12%. What will be the new total?

Answer

5. If a water bill of \$240 includes VAT at 17.5%, how much VAT will be paid? Express your answer to the nearest whole cent.

Answer

6. The pages of a novel have on average 50 lines comprising 12 words. If in total there are 175 pages, how many words does the novel contain?

Answer

7. A cyclist averages 7.5 miles an hour on level ground but only 4.5 miles an hour going uphill. If the ratio between flat ground and hills is 1:3, what is the cyclist's average speed in mph over 60 miles?

Answer

8. A publisher must sell 20,000 books at an average unit cost of £7.60 to break even. If salaries account for 40% of expenditure, how much is the wages bill?

Answer

9. A box of chocolates comprises 12 chocolates and weighs three-quarters of a kilogram. If the packaging weighs $\frac{1}{5}$ of the total, how much does each chocolate weigh? Express your answer as a fraction of a kilogram.

Answer

10. A garage discovered that $\frac{1}{2}$ of its customers bought French cars, $\frac{1}{3}$ German cars and $\frac{1}{6}$ (20) American cars. How many customers did the garage have?

Answer

11. How much is three-fifths of \$750?

Answer

12. One-half of the turnover of a business is spent on salaries, one-third on production and distribution. After setting aside £10,000 for marketing, there is £23,000 left. How much is the total turnover?

Answer

13. In a sale, goods were advertised at one-quarter of their marked price. What was the total sales price for:

a calculator, marked price \$5.90?

a book, marked price \$17.30?

jeans, marked price \$44.00?

Answer

14. To travel to work, a woman spends 70 cents on a bus fare and 120 cents on a train fare. She spends the same amount on the way home. In a normal working week, how much would she save if she bought a travel pass at \$14.50?

Answer

15. A man purchased a lottery ticket each week (52 weeks a year) for six years. He worked out that he would have to win £624 to recoup his money. How much did each ticket cost?

Answer

16. A full-price ticket to Liverpool costs £84. If you travel after 9.30 am the cost drops to £32. What percentage saving does this represent?

Answer

17. There are only 24 women out of a total workforce of 1,200 in an engineering company. What is the ratio of female to male employees?

Answer

18. From an initial fee of £600 a company had to credit back to the customer £96 to cover a dry-cleaning bill. What is the percentage refund?

Answer

19. Find the compound interest on \$2,000 invested for 3 years at 5% per annum (pa).

Answer

20. A 16-kilogram sack of potatoes costs £4.50. How much does a kilogram of potatoes cost? Express your answer to the nearest whole penny.

Answer

21. A bank offers 6% pa interest calculated annually. Another offers 10% pa compound interest calculated every six months. What is the difference paid at the end of the year on a deposit of \$1,000?

Answer

22. A new ship is 300 feet long and its plans are on a scale of 1:200. How long is the ship as it is represented on the plans?

Answer

23. An investment of £10,000 earns interest at 6% pa fixed for a 5-year period. How much will the total investment with interest amount to at the end of the 5-year period?

Answer

24. A business loan of \$2,000 is to have interest charged at 20% pa. How much will the monthly repayments be if both the interest and the loan are to be repaid in one year?

Answer

25. The interest on a car loan of £3,000 is to be charged at 15% pa. How much will the monthly repayments be if both the loan and interest are to be repaid in 24 months? Express your answer to the nearest penny.

Answer

26. A box of 100 pens is bought for £5 and the pens are sold for 8 pence each. What is the percentage profit?

Answer

27. A table was sold for \$280 at a 20% loss. What was the buying price?

Answer

28. A watch costs £9.00 plus VAT, which is charged at 17.5%. What is the total price to be paid?

Answer

29. An estimate is made for \$2,000 plus tax (at 17.5%) for the preparation of a business plan. How much tax is to be paid?

Answer

30. A restaurant bill totals £110.00 inclusive of VAT and a service charge. VAT was charged at 17.5% after a service charge of 10% had been levied. How much was the bill excluding the VAT and service charge? Express your answer to the nearest penny.

Answer

31. A photocopier service contract costs \$40 a month excluding tax (at 17.5%). How much tax is paid in 12 months?

Answer

32. A cooker is sold for £800 inclusive of VAT, which is charged at 17.5%. How much did the cooker cost excluding VAT?

Answer

33. Divide \$50 into the ratio of 3:2.

Answer

34. Components A, B and C are ordered in the ratio 1:5:4. How many of each is included in an order that totals 1,000 components?

Answer

35. In some areas in the United Kingdom, male unemployment is as high as 30% of the total economically active population. Express this level of unemployment as a ratio.

Answer

36. On a housing estate, 60% of the unemployed were found to have last worked in the construction industry, while 24% last worked in the public service sector and 16% last worked in retail and distribution. Express these quantities as a ratio.

Answer

37. The ratio between unemployed graduates to unemployed people without any kind of qualification is 1:8. If 30 unemployed graduates are found to use a resource centre, how many unemployed people with no qualification might be expected to attend?

Answer

38. A woman earns £13,000 and has a tax-free single person's allowance of £2,800. How much tax would she pay on her taxable earnings (assume the rate of tax is 24%).

Answer

39. A man earns £200 a week. He pays tax at 24% on all his earnings over his annual tax-free allowance of £2,300. How much tax does he pay each week? Express your answer to the nearest penny.

Answer

40. If tax is charged at 24%, how much is payable on a taxable income of £10,000?

Answer

41. A car travels 70 miles in $2\frac{1}{2}$ hours. What is its average speed?

Answer

42. A train travels at an average speed of 110 mph. How long does it take to travel 385 miles?

Answer

43. A yacht averages 4 nautical miles an hour but the tide is running against it at 1 knot. How long will the yacht take to reach a harbour 1.5 nautical miles away? (Note that 1 knot = 1 nautical mile an hour.)

Answer

44. The initial price on an item was £99 but it was reduced in a sale by 10%. After a week a further 10% discount was made on the new price. What was the eventual asking price?

Answer

45. A machine produces 130 nuts in 10 minutes. A second machine produces 264 nuts in 12 minutes. How long would it take the two machines running simultaneously to produce 700 nuts?

Answer

46. A total of 5,000 copies of a book were sold: 60% were sold at 50% discount, 20% were sold at 30% discount while the remainder were sold at the cover price of £6.99. What was the total revenue?

Answer

47. In an election the Yellow Party candidate received half as many votes as the Red Party candidate. The Red Party candidate received one-third more votes than the candidate from the Blue Party. In total, 10,000 people voted for the Blue Party candidate. How many votes did the Yellow Party candidate receive?

Answer

48. In a sample of 220, 5% were positive. In a second sample of 120, 10% were positive. What was the combined number of positive responses?

Answer

49. A printer prints 20 characters a second and is 4 times as fast as the average printer. If the average printer is 5 times as fast as Jill, the copy typist, how many characters a second can Jill type?

Answer

50. After paying 24 per cent tax on all income over \$2,300, a person has a net income of \$12,000. What was the income before tax?

Answer

Find the missing numbers in the following sequences:

51. 2, 5, 8, 11, ?, 17, 20

Answer

52. 504, 512, 520, ?, 536

Answer

53. 540, 534, 528, 522, 516, 510, ?

Answer

54. ?, 6, 18, 54, 162, 486

Answer

55. 37,500, 7,500, ?, 300, 60

Answer

56. 1, 4, ?, 9, 14, 23, 37

Answer

57. 2, -4, 8, -16, 32, -64, ?

Answer

58. 123, 456, 789, 101, 112, ?

Answer

59. 3, 9, 27, 81, ?, 729

Answer

60. 1, 8, 27, 64, 125, ?

Answer

End of test

Five practice tests

The remainder of this chapter is taken up with five realistic full-length practice tests. To get the most out of them, sit them as if they were real and stick to the time limits. To make the tests more realistic, set yourself the challenge of trying to beat your last score. Don't be too hard on yourself if you find this almost impossible, because the level of difficulty of the tests gets progressively harder. You will almost certainly be getting better as you practise even if you do not get a higher score each time, because the goalposts are moving.

These timed tests are intended only as practice timed tests and to serve primarily as an aid to learning, so do not read too much into the results. They should form a valuable part of your programme of self-study and they will help you develop an effective exam technique under realistic conditions and help you further to identify your strengths and address any weaknesses.

I have started with tests for the one in six graduates who lack confidence in the use of percentages, averages and the interpretation of tabulated data, and conclude with tests at the advanced level. The latter tests included a good number of questions at the level you might expect to get right if you were to obtain a good score in a real graduate test. What I mean by good is a score in the top 25 per cent of candidates. Setting the level of these timed tests is not a fine science, and while they may be appropriate for one candidate, I will not have got it right for others. You will find some hard questions to help you get used to the idea that you will not get them all right and should not spend too long on any one question.

Remember the most important thing: you have to try really hard to do well in a psychometric test.

THIS PAGE INTENTIONALLY LEFT BLANK

Numerical test 1: Practice intermediate-level number problem test

The test that begins over the page comprises 30 numerical tasks for which you are allowed 25 minutes.

The questions are either multiple choice or short answer. You are required to work out the answer or identify which of the suggested answers is correct and enter the corresponding letter or answer in the answer box.

Do not use a calculator or other mechanical aid.

Do look at the suggested answers to see whether you can save time by estimating the answers.

When it helps, round sums up or down to more convenient amounts. If you cannot work out a question, practise educated guessing.

Make a note of the time and then turn the page and begin the mock test.

THIS PAGE INTENTIONALLY LEFT BLANK

1. The plane is due to depart at 14.15 hours. You are required to check in one and a half hours before departure and need to allow two hours to travel to the airport. What time would you need to leave home?

A	B	C	D	E	F
11.5	9.45	10.45	Noon	11.45	10.15

Answer

2. In 1995, 60 per cent of graduates were found to be poor at the interpretation of information when it was presented numerically. If there were 2,200 graduates that year, how many were able to interpret this kind of information?

A	B	C	D	E	F
1,320	1,100	2,200	1,400	880	1,000

Answer

3. A factory worker worked 37.5 hours a week. How many hours did she work over a 12-week period?

A	B	C	D	E	F
450	300	440	296	375	950

Answer

4. An office worker was required to keep a time sheet detailing how long it took to undertake each task. Excluding lunch, what was the total time taken to complete all the following tasks?

Franking mail	20 minutes
Amending computer files	45 minutes
Answering the telephone	70 minutes
Lunch	30 minutes

A	B	C	D	E	F
$2\frac{1}{2}$ hours	2 hours 5 minutes	2 hours	$1\frac{3}{4}$ hours	$2\frac{1}{4}$ hours	$1\frac{1}{2}$ hours

Answer

5. A survey in a café found that a quarter of all customers took sugar and an eighth took sweetener. What fraction of customers took no sugar or sweetener?

A	B	C	D	E	F
$\frac{3}{5}$	$\frac{9}{16}$	$\frac{3}{8}$	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{1}{20}$

Answer

6. A survey found that $\frac{3}{16}$ ths of women said that they would always shop at a complex that offered baby changing facilities; $\frac{5}{8}$ ths said that they thought it advantageous if a complex offered this service; and the remaining 75 respondents indicated that they thought it made no difference. What number of women said they thought the service advantageous?

A	B	C	D	E	F
25	250	150	50	125	175

Answer

7. If a machine is designed to rotate 300 times a minute, how many rotations does it perform in an hour?

A	B	C	D	E	F
18 million	9,000	9 million	180,000	18,000	90,000

Answer

8. If the fastest student in the class can type at 30 words a minute, while the slowest can only manage 20 words, what would be the time difference between them if they undertook to input a document comprising 3,000 words?

A	B	C	D	E	F
50 minutes	1 hour	45 minutes	$1\frac{1}{4}$ hours	90 minutes	100 minutes

Answer

9. An architect designed a long, sweeping staircase which was a total of 16 metres in length. He specified that the staircase was to have 48 steps. Approximately, what was the length of each step?

A	B	C	D	E	F
$\frac{1}{2}$ metre	200 cm	$\frac{1}{4}$ metre	300 cm	400 cm	$\frac{1}{3}$ metre

Answer

10. It was recommended that the photocopier was serviced every half a million copies and on average it was used to undertake 70,000 copies a month. How many months should pass between services?

A	B	C	D	E	F
3	8	6	7	9	4

Answer

11. The head teacher of a school realized that he had overspent on the wages by 5 per cent. If the monthly total was supposed to be kept under \$21,000, how much had been overspent?

A	B	C	D	E	F
\$1,500	\$950	\$1,050	\$1,175	\$1,000	\$700

Answer

12. A ship's engine was found to achieve a speed of 9 knots at 2,700 revolutions. How many extra revolutions would you expect to be required if the captain asked to increase the speed to 9.5 knots?

A	B	C	D	E	F
600	400	300	150	450	200

Answer

13. To build a product you use 16 parts costing 25 cents each and 42 parts at 19 cents each. What is the total build cost?

A	B	C	D	E	F
\$13.73	\$11.98	\$13.29	\$11.60	\$13.54	\$11.73

Answer

14. Your office referred 22 files to storage over a three-month period and they took up just over 4 metres of shelving. At that rate, how long would you expect it to take before your stored files occupied a kilometre of shelf space? (Answers are expressed in whole years.)

A	B	C	D	E	F
12 years	10 years	62 years	90 years	83 years	50 years

Answer

15. From what time should you book the conference room if the delegates' train arrives at 13.00 hours, the station is approximately 15 minutes away and you expect them to lunch with the Minister for two hours before the seminar begins?

A	B	C	D	E	F
Noon	4.00 pm	1.30 pm	3.15 pm	2.00 pm	2.45 pm

Answer

16. The photocopier operates at 45 copies a minute. How many minutes will it take to duplicate 1,100 copies?

A	B	C	D	E	F
20	50	21	55	24	19

Answer

17. Three departments decided to share equally the cost of a new piece of equipment. The bill totalled \$3,780. How much did each department have to contribute?

A	B	C	D	E	F
\$1,260	\$260	\$2,260	\$1,890	\$2,890	\$890

Answer

18. A metre of rope cost 29 cents. How much would 120 metres cost?

A	B	C	D	E	F
\$29.29	\$36.50	\$34.80	\$37.10	\$29.10	\$29.00

Answer

19. If 350 people entered a competition and each paid \$1.20, how much would remain if the organizer had to spend a total of \$200 on prizes?

A	B	C	D	E	F
\$220.20	\$220	\$22.40	\$218.80	\$217.60	\$215.20

Answer

20. A pack of 8 sample pots of paint costs \$7.68. What is the cost of each pot?

A	B	C	D	E	F
130	85	76.3	109	18	96
cents	cents	cents	cents	cents	cents

Answer

21. Most telephone calls were received between 10.00 and 11.00 am, which is three times as many as the 150 calls received between 3.00 and 4.00 pm. On average, how many calls a minute were received during the busiest hour?

A	B	C	D	E	F
6	150	$7\frac{1}{2}$	$2\frac{1}{2}$	16	450

Answer

22. A 50-gram item costs 25 pence to post. At the same rate, how much would you expect to pay to post an item that weighed a kilo?

A	B	C	D	E	F
£15	£150	£200	£500	£20	£5

Answer

23. If tax on a £150 television set is £22.50, how much tax is paid on a television that costs £1,050?

A	B	C	D	E	F
£157.50	£210.00	£183.75	£105.00	£73.50	£52.50

Answer

24. If it takes one person 5 hours to load a truck while another person can complete the task in 3 hours, how long should it take them to half-fill the truck if they work together at the same rate?

- | | | | | | |
|---------|---------|---------|---------|---------|---------|
| A | B | C | D | E | F |
| 2 hours | 3 hours | 4 hours | 5 hours | 6 hours | 8 hours |

Answer

25. One number is 3 times another and their sum is 28. What are the two numbers?

Answer

26. If 18% of the fuel is used, how many gallons did we start with if 492 gallons remains?

Answer

27. What is the sum of all the numbers from 18 through to 40?

Answer

28. Find three consecutive numbers that have the sum of 117.

Answer

29. If you cycle 6 times faster than you walk and you take in total 28 minutes to both cycle to work and walk the same distance back, how long did you spend walking?

- | | | | | | |
|---------|---------|---------|---------|---------|---|
| A | B | C | D | E | F |
| 28 | 26 | 24 | 14 | 4 | |
| minutes | minutes | minutes | minutes | minutes | |

Answer

30. How many numbers are there from 67 through to 99?

- | | | | | | |
|----|----|----|----|----|---|
| A | B | C | D | E | F |
| 31 | 32 | 33 | 34 | 35 | |

Answer

End of test

Numerical test 2: Practice intermediate-level sequencing test

Over the page you will find 26 practice sequencing questions. In each sequence one entry has been replaced with 'XX'. Alongside each question is a box where you must mark your answer.

Always enter two digits in your answer. If the answer is a single figure, enter a zero in front of it (eg 05).

Allow yourself 20 minutes to complete the test.

Do not turn over the page until you are ready to start.

THIS PAGE INTENTIONALLY LEFT BLANK

1. 20 33 46 XX 72

Answer

2. 6 9 XX 15 18

Answer

3. 61 122 183 2XX 305

Answer

4. 1,027963 8XX 835

Answer

5. 5 10 20 XX 80

Answer

6. 3 12 48 1XX 768

Answer

7. 2 6 18 54 1XX

Answer

8. 3 5 7 XX 11 13

Answer

9. 64 32 16 XX 4 2 1

Answer

10. 4 6 8 XX 12 14 16

Answer

11. 20 18 16 14 XX 14 16 18 20

Answer

70 How to pass graduate psychometric tests

12. 2 3 5 6 XX 9 11 12 14

Answer

13. 5 7 10 14 XX 25 32 40

Answer

14. 23 20 17 XX 11 8 5

Answer

15. $\frac{1}{2}$ $\frac{1}{4}$ $\frac{3}{4}$ 1 $\frac{7}{4}$ $\frac{xx}{4}$

Answer

16. 121 36 157 193 3XX

Answer

17. 100 1 101 102 XX3

Answer

18. 5 2 10 20 200 XX00

Answer

19. 12 -24 36 -48 XX

Answer

20. 42 -33 24 -15 XX

Answer

21. 12 XX -8 -6 4 2

Answer

22. 2 $-\frac{1}{4}$ 6 $-\frac{1}{8}$ XX

Answer

23. 1 3 7 15 XX

Answer

24. 1 $1\frac{1}{3}$ 9 $\frac{1}{27}$ XX

Answer

25. 4 10 28 82 XX4 730

Answer

26. 11 12 113 124 33X X46

Answer

End of test

THIS PAGE INTENTIONALLY LEFT BLANK

Numerical test 3: Intermediate data interpretation practice test

Data interpretation tests seek to measure a candidate's ability to evaluate information and identify logical connections. You are provided with a passage describing a situation and a problem.

There are in total 30 questions in this test and you are allowed 25 minutes in which to complete them.

Note that the last 10 questions are of a different style from the first 20 questions. All the questions require you to read a situation or passage and answer questions, but the last 10 questions also require you to consider a list of five additional pieces of information that may or may not resolve the problem. It is your task to identify from the list of five the item or items that solve the problem.

Unless you are required to, do not waste time working out the answers when you can identify the item or items of information required in order to establish the answer.

Do not use a calculator.

Do not turn the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

Situation 1

A factory is to commission two production lines. Production line 1 is to use the existing technology. Production line 2 is to use the latest innovations in technology and, while promising to achieve considerable advances in productivity, it will take longer to install and is likely to experience teething problems. Figure 1 illustrates the productive record of each production line. Refer to this graph in order to answer the following questions.

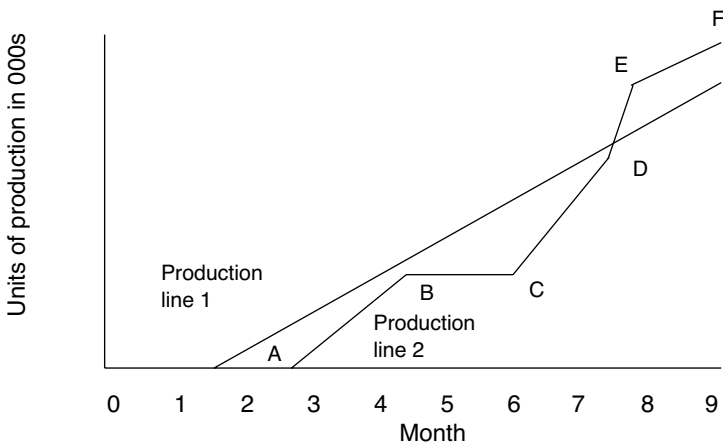


Figure 1

Question 1

In which month did production line 2 overtake production line 1 in the total number of units produced?

Answer

Question 2

From the information given, is it possible to attribute a reason why production line 1's record forms a straight line while production line 2's record takes the form of a polygon?

- A Yes, it is possible to attribute a reason
- B No, it is not possible to attribute a reason
- C You cannot tell whether it is possible or not

Answer

Question 3

The manager of production line 2 reported a complete breakdown. At what point did this occur?

- A Month 3
- B During month 4
- C Before month 4
- D You cannot tell

Answer

Question 4

Consider the following questions (A and B) and indicate whether both, either or neither can be answered, given the available data.

- A Can the duration of the reported breakdown be established?
- B Can the loss of production be quantified?

- 1. if both question A and B can be answered
- 2. if only question A can be answered
- 3. if only question B can be answered
- 4. if neither question can be answered

Answer

Situation 2

Fifty candidates sat a test and the number of candidates who scored more than a specific number of correct answers is illustrated in Figure 2. Refer to this graph in order to answer the following questions.

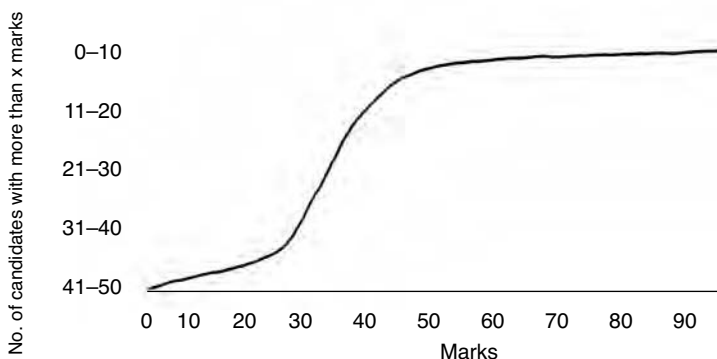


Figure 2

Question 5

What proportion of the candidates achieved over 50 correct marks?

- A The majority
- B A sizeable minority
- C Only a few
- D You cannot tell

Answer

Question 6

Is it possible to work out the median?

- A Yes, it is possible
- B No, it is not possible
- C You cannot tell whether it is possible or not

Answer

Question 7

A curve such as the one in Figure 2 is called a:

- A Polygon
- B Ogive
- C Parallel
- D None of these

Answer

Question 8

Consider the following questions (A and B) and indicate whether both, either or neither can be answered, given the available data.

- A Did the 50 candidates do well or badly in the test?
- B How many candidates got more than 70 marks out of 100?

- 1. if both questions A and B can be answered
- 2. if only question A can be answered
- 3. if only question B can be answered
- 4. if neither question can be answered

Answer

Situation 3

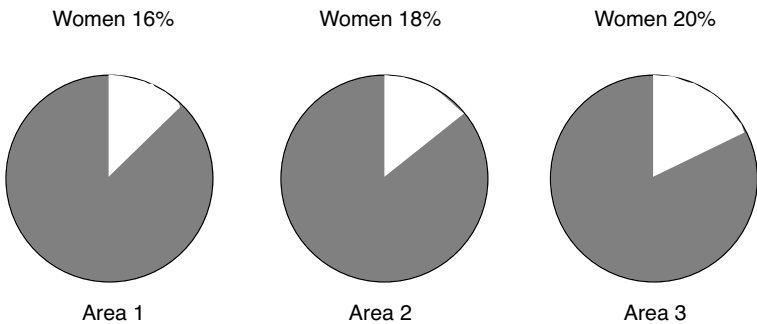


Figure 3

The three pie charts shown in Figure 3 demonstrate the level of unemployment among women as a percentage of the economically active population in three areas. The economically active population excludes people too old or too young to work. The total economically active population for the three areas is 55,000.

Question 9

Is it possible to work out the percentage level of unemployment for the total populations of all three areas?

- A Yes, it is possible.
- B No, it is not possible.
- C You cannot tell whether it is possible or not.

Answer

Question 10

What is the mean percentage rate of unemployment for economically active women across the three areas (assuming that the areas have equal populations)?

- A 18%
- B 54%
- C 3%
- D You cannot tell

Answer

Question 11

How many unemployed women are there?

- A 22,500
- B More than half the total
- C Less than half the total
- D You cannot tell

Answer

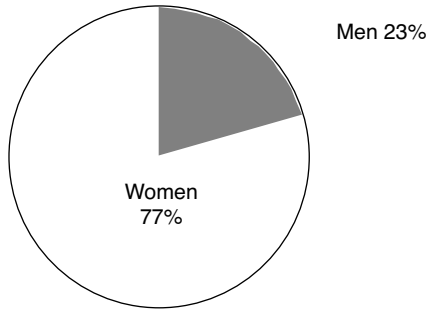
Question 12

Consider the following questions (A and B) and indicate whether both, either or neither can be answered, given the available data.

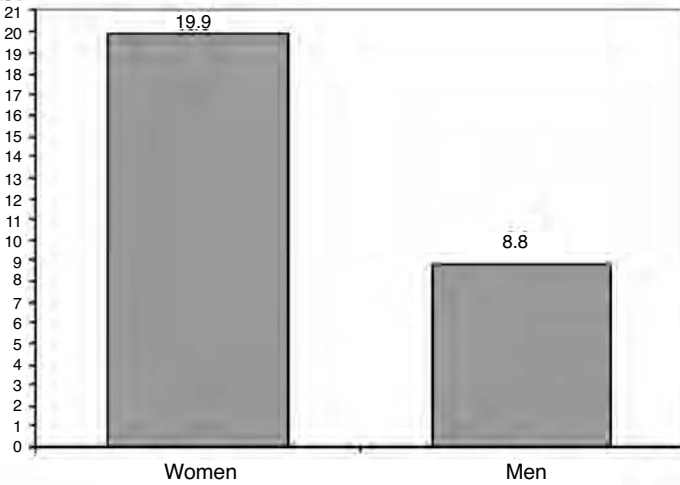
- A Why are there more unemployed men than women?
 - B What is the total working population across the three areas?
1. if both questions A and B can be answered
 2. if only question A can be answered
 3. if only question B can be answered
 4. if neither question can be answered

Answer

Situation 4



The gender of customers who requested childcare facilities at the shopping arcade



The percentage of customers wanting childcare facilities who were willing to pay for the service

Figure 4

The managers of a shopping arcade undertook a process of customer consultation and found that high on the list of facilities requested by customers was a shoppers' crèche. In total, 800 customers took part in the survey, which was conducted during working hours between Monday 14 and Wednesday 16 May.

Question 13

What percentage of women who requested childcare facilities were also willing to pay to use the service?

- A 19.9%
- B 23%
- C 77%
- D You cannot tell

Answer

Question 14

What percentage of male customers requested childcare facilities?

- A 77%
- B 8.8%
- C 23%
- D You cannot tell

Answer

Question 15

Is it true to say that 100 per cent of customers who took part in the survey wanted childcare facilities at the arcade?

- A Yes
- B No
- C You cannot tell

Answer

Question 16

Consider the following questions (A and B) and indicate whether both, either or neither can be answered, given the available data.

- A What is the ratio of men to women customers who wanted childcare facilities?
- B How might the result have been affected had the management arranged for the survey to be carried out over the weekend rather than during the working week?

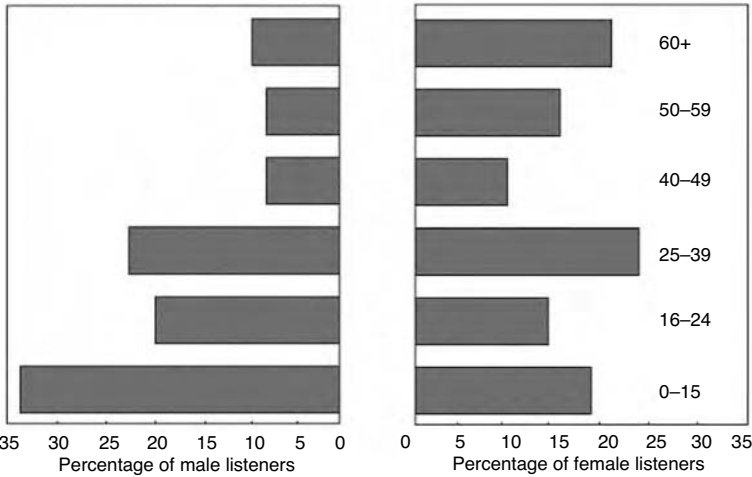
1. if both questions A and B can be answered
2. if only question A can be answered
3. if only question B can be answered
4. if neither question can be answered

Answer

Situation 5

The programmes director of a local radio station received the cohort shown in Figure 5, which compares the age and gender of listeners. During the period to which the cohort refers, 52 per cent of the station's audience were women. Most mornings, 125,000 families tune in for the breakfast show.

Use this information and the data contained in the cohort to answer the questions that follow.



Age/gender cohort of local radio station listeners

Figure 5

Question 17

What percentage of male listeners are aged 15 years or under?

- A 0-15%
- B Between 15 and 20%
- C Between 30 and 35%
- D You cannot tell

Answer

Question 18

What percentage of women aged between 16 and 24 years tune in to the station?

- A Just under 15%
- B 20%
- C 100%
- D You cannot tell

Answer

Question 19

What percentage of women listeners are aged 45 years?

- A Just over 10%
- B Just under 10%
- C You cannot tell

Answer

Question 20

Consider the following questions and indicate whether both, either or neither can be answered, given the available data.

- A What percentage of listeners are aged between 25 and 39 years?
- B With which age group is the station most popular?

1. if both questions A and B can be answered
2. if only question A can be answered
3. if only question B can be answered
4. if neither question can be answered

Answer

Question type 2

After reading the passage you must select from five additional pieces of information that resolve the problem. It is your task to identify the item or items that solve the problem.

Question 21

A house plant and a decorative pot together retail at the inclusive price £3.75. Which two pieces of information do you require to establish the price of the pot before tax?

- A The pot costs twice as much as a non-decorative equivalent.
- B The pot costs three times as much as the plant, which is tax exempt.
- C VAT in the United Kingdom is currently 17.5 per cent.
- D An inclusive total is established by multiplying the exclusive price by the percentage rate of tax and adding this figure to the total.
- E The price of an item excluding tax can be worked out from the inclusive total by multiplying by 0.036 and subtracting the answer from the total.

Answer

Question 22

A group of friends charter a yacht for their annual holiday. Which three pieces of information are necessary to establish the amount that they each had to contribute towards the deposit?

- A Because it was the start of the season the trip cost £100; prices increased sixfold by July.
- B The boat could sleep a maximum of six but one berth was spare.
- C The holiday was to last two weeks.
- D A 10 per cent deposit was payable with the booking and is refundable on the safe return of the vessel.
- E Tony was going to come but cancelled when he realized the date would clash with his wife's birthday.

Answer

Question 23

John's 1990 salary was equal to three times his current salary. It was double what he earned in 1993. Which piece of information do you require in order to establish the percentage decrease he has had to endure since 1990?

- A Inflation over the period totalled 13 per cent.
- B John paid £5,250 tax in 1990.
- C The difference between John's salary in 1990 and 1993 totalled £7,000.
- D The rate of tax in 1990 was 25 per cent.
- E John's total current salary was only £1,750 greater than his 1990 tax bill.

Answer

Question 24

Peter lives on a small island a short distance from the mainland. His journey to work involves a boat trip and a train journey. Which two pieces of information do you require in order to establish the distance between Peter's house and the railway station?

- A The channel between the island and the mainland is 300 yards across.
- B It is exactly 100 metres from Peter's house to the pub.
- C The railway station is on the shore and Peter can see it from his front garden.
- D The locations of the house, pub and railway station form an equilateral triangle.
- E The only other building on Peter's island is a pub.

Answer

Question 25

Donna, Lucy and Chris between them own 80 marbles. Which two pieces of information allow you to establish how many of the marbles are Chris's?

- A Chris and Lucy have the same number.
- B Donna owns twice as many as Lucy.
- C Lucy used to have 25 until she gave some to her brother.
- D Fred, Lucy's brother, has three fewer than twice as many as Donna.

Answer

Question 26

A piece of gold weighing 38 grams is not pure but mixed with base metals. Which three pieces of information do you need to establish the current market value of gold?

- A Eighty per cent of the weight is due to the base metal.
- B The base metal is copper.
- C To convert from grams to ounces, multiply by 0.03527.
- D The volume of the piece is 3 cubic centimetres.
- E Gold is worth £200 an ounce.

Answer

Question 27

Steven, Kathy and Gino are all to drive from their home to Springville for an evening out. Gino in his GTI drives at 100 mph, Kathy in her 2CV more sensibly averages 35 mph while Steven never exceeds the speed limit of 60 mph. Which item of information do you require to establish the distance between their home town and Springville?

- A Gino arrived in Springville 5 minutes before Steven and 10 minutes before Kathy.
- B Despite all the stops at traffic lights, Kathy completed the journey in 35 minutes.
- C Gino was booked for speeding.
- D Steven completed the journey in 30 minutes.

Answer

Question 28

The town hall can accommodate 40 rows of seats with between 25 and 37 seats per row. Which three items of information do you require to establish the percentage of the town's population that can be seated in the town hall when full?

- A 20 rows can hold over 28 seats.
- B The 1991 census of the population recorded the town as having a population of 22,350.
- C The front 30 rows hold a total of 780 seats (an average of 26 per row).
- D Since the closure of the shoe factory and the loss of 1,800 jobs, people have moved away, leaving the population now 7% below the census total.
- E In 1991, 18 per cent of the population were under five years of age.
- F The overall average number of seats per row is 28.

Answer

Question 29

Ford sells its basic 'Model T' at \$4,250, or with extras for \$5,050. Which item of information do you require to establish the most profitable option?

- A The price difference between options totals £800.
- B Ford aims at achieving a profit margin of 3 per cent.
- C The current basic model comes as standard with items sold as extras 18 months ago.
- D The basic model achieves the 3 per cent profit margin.
- E Competition with Japanese car manufacturers means that Ford has to supply the extras to customers at cost price.

Answer

Question 30

In her will, Claire's instructions stated that all her possessions were to be sold and the cash shared out as follows: her second child was to receive £1,000 more than her third child, while her first-born was to get three times as much as her second. Which three items of information are required to establish how much Martin was to receive?

- A Sue received £3,500.
- B Claire had four children.
- C Martin is 18 months older than Sue and one year younger than Peter.
- D Ken, Claire's youngest, was born two years after Sue.
- E The children mentioned in the will are called Sue, Peter and Martin.
- F Tragically, Claire outlived one of her children.

Answer

End of test

Numerical test 4: Practice intermediate-level data interpretation test

This type of question provides numerical data with between two and four questions relating to it which you must answer. It may pay to look at the suggested answers prior to attempting lengthy calculations as it is sometimes possible to rule some of them out and to estimate the correct answer by rounding up sums to more convenient figures. If you do not have sufficient time to finish, try an educated guess. Each suggested answer is given a number. To record your answer you simply mark the answer in the answer box.

This test comprises 25 questions and you are allowed 25 minutes to complete it.

Do not turn the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

The table below indicates the total number of young people and what they did after leaving school in the rural districts of an English county between the years 1988 and 1991.

<i>Year</i>	1988	1989	1990	1991
No of school leavers	3,000	2,196	2,400	1,652
Returned to education	450	769	480	798
Entered employment	300	285	240	189
Entered training	600	483	480	266
Unemployed	750	373	480	147
Left district	150	66	120	189
Unknown	750	220	600	63

1. Between the years 1988 and 1990, which after-school activity saw the greatest percentage increase?

- 1) returned to education 2) entered training
3) became unemployed 4) left the district

Answer

2. How many activities were selected by the same percentage of young people in 1988 and 1990?

- 1) two categories 2) four categories 3) five categories
4) three categories

Answer

3. How many more times popular was returning to education compared with entering training in 1991?

- 1) five times 2) six times 3) four times 4) three times

Answer

4. Over the four-year period, what was the average number of annual school leavers?

- 1) 2,309 2) 3,216 3) 2,312 4) 2,038

Answer

The table below illustrates the population structures of countries. The data relate to January 1990.

<i>Country</i>	<i>Total population (millions)</i>	<i>Live births per 1,000</i>	<i>Deaths per 1,000</i>
Country A	56.4	13.2	11.9
Country B	53.6	12.9	12.3
Country C	70.3	11.7	11.6
Country D	12.7	9.9	10.1
Country E	18.2	10.8	11.2

5. Which country is experiencing the fastest rate of growth in population?

- 1) A 2) B 3) C 4) E

Answer

6. Which country's population is over four times smaller than country B's?

- 1) A 2) B 3) C 4) D

Answer

7. Which country experienced just over 125,000 births?

- 1) B 2) C 3) D 4) E

Answer

8. Which two countries experienced a mean rate of death per thousand of 1,155?

- 1) A and B 2) A and E 3) A and C 4) D and E

Answer

The table below shows the monthly average rainfall, hours of sunshine and wind speed for a European country. Consult it to answer the questions below.

	<i>Rainfall (mm)</i>	<i>Sunshine (hours)</i>	<i>Wind speed (knots)</i>
January	91	54	21
February	108	80	17
March	155	140	15
April	160	153	13
May	121	165	12
June	97	228	9
July	88	218	10
August	80	200	11
September	113	193	12
October	102	120	15
November	114	90	16
December	103	64	18

9. What is the mean wind speed for the months of January, February and March?

- 1) 18.11 2) 16.66 3) 17.66 4) 15.33

Answer

10. Which three consecutive months have a total of 403 hours of sunshine?

- 1) May, June, July 2) October, November, December
3) March, April, May 4) September, October, November

Answer

11. Identify the percentage that expresses the increase in sunshine between the months of February and March.

- 1) 75% 2) 8% 3) 16% 4) 50%

Answer

12. What is the ratio between the rainfall during the wettest and driest months?

- 1) 2:1 2) 1:2 3) 1:3 4) 3:1

Answer

The table below shows population, infant mortality, birth rate and agricultural area per person for five countries.

Country	Population (millions)	Infant mortality per 1,000 births	Total number of births per 1,000	Agricultural area per person (acres)
1980				
A	10	45	12	0.25
B	6	82	24	0.125
C	50	11	9	0.1
D	3	30	16	1.3
E	21	60	19	0.9
1990				
A	12	33	11	–
B	6.5	68	24	–
C	49	7	9	–
D	3.1	26	18	–
E	23	45	21	–

Key:- = Information not available

13. Which country experienced the highest rate of infant mortality in 1990?

- 1) E 2) A 3) B 4) C

Answer

14. Which countries have experienced an increase of two births per 1,000 over the decade?

- 1) E and D 2) A and C 3) B and C 4) D and A

Answer

15. What is the percentage increase in population experienced by country E over the decade illustrated?

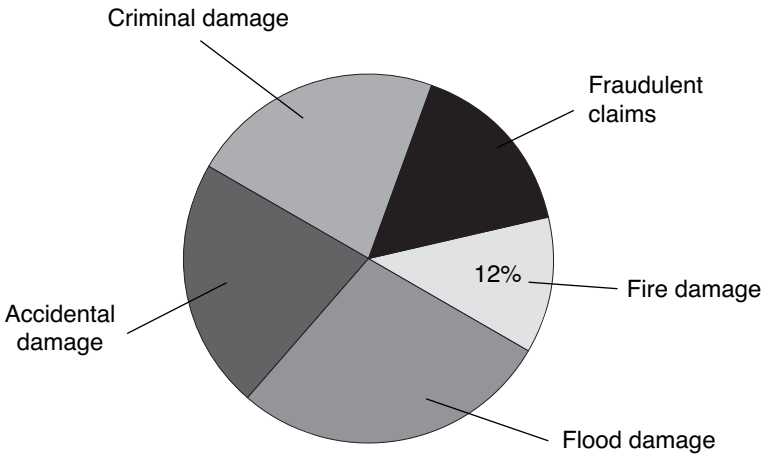
- 1) 10.5% 2) 8.5% 3) 9.0% 4) 9.5%

Answer

16. If in country A the same amount of agricultural land is in use in 1990 as was the case in 1980, to what does the agricultural area per person decrease in 1990 (suggested answers are rounded down to two decimal places)?

- 1) 0.20 2) 0.15 3) 0.30 4) none of these

Answer



Nature of all claims against the unlucky insurance syndicate

Figure 6

17. If all flood, accidental and criminal damage related claims totalled 72%, how many fraudulent claims would you expect among a total of 2,500 claims in all?

- 1) 200 2) 300 3) 400 4) 500

Answer

18. Express the frequency of claims from fire damage against all genuine claims as a ratio in its simplest form (take genuine claims = all claims – fraudulent claims).

- 1) 4:20 2) 25:3 3) 3:25 4) cannot tell

Answer

19. If the fire damage claims totalled \$420,000 and the number of all claims was 7,000, what would be the average value of the fire damage claims?

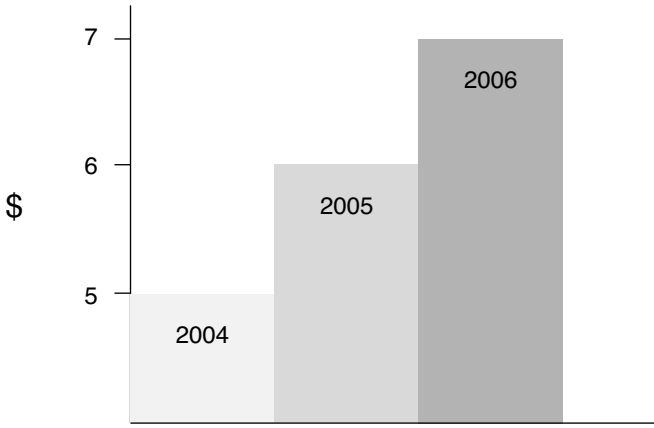
- 1) 500 2) 700 3) 900 4) 1,100

Answer

20. What would be the angle of the criminal damage segment of the pie if it represented 20% of all claims?

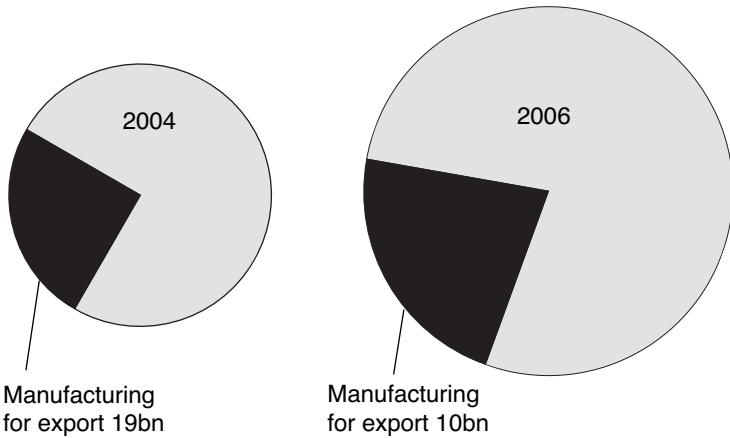
- 1) 66 degrees 2) 68 degrees 3) 70 degrees 4) 72 degrees

Answer



Average wage in the Free Trade Economic Zone

Figure 7



Dollar value (billions) by activity in the Free Trade Economic Zone

Figure 8

21. How would the \$ axis on the graph usually be labelled?

- 1) x 2) y 3) -x 4) -y

Answer

22. For every cent increase in the average wage, what has been the gain/loss in the value of trade in manufacturing for export (take 1 bn = 1,000 million, and \$1 = 100 cents)?

- 1) gain of 4.5 million 2) loss of 450 million
3) loss of 45 million 4) gain of 90 million

Answer

23. The average wage in fair trade in 2004 was:

- 1) \$5 hourly 2) \$5 daily 3) \$5 weekly 4) cannot tell

Answer

24. In 2004 what was the total value of trade in the economic zone if manufacturing for export contributed 5% of that total?

- 1) 19 2) 92 3) 190 4) 380

Answer

25. If the total value of trade was 150 bn in 2006, calculate the angle of the manufacturing for export segment of the pie chart:

- 1) 22 degrees 2) 23 degrees 3) 24 degrees 4) cannot tell

Answer

End of test

THIS PAGE INTENTIONALLY LEFT BLANK

Numerical test 5: Advanced data interpretation practice test

I [a graduate candidate] recently sat an advanced 'professional-level' numerical test. The questions required candidates to extract data from multiple data sets (eg bar charts, pie charts, profit and loss account) and then to work through up to four calculations to reach the answer, combining relevant data from the respective data sets. Some of the questions tested understanding of data sufficiency – allowing you to answer 'true', 'false' or 'cannot say'.

This test comprises 23 questions that require a medium to high command of the numerical competencies examined in graduate psychometric tests. You are only allowed 23 minutes in which to attempt these questions (that is obviously 1 minute a question). Some of the questions will take longer than 1 minute to complete, so you should aim to answer the easier questions in less than 1 minute in order to spend more time on the more demanding questions. As with a real graduate test of numerical skills, few candidates will succeed in answering all the questions in the time allowed.

There are two styles of question.

Style 1

You are presented with data in the form of a table, graph or chart and must use the information to select one of the five suggested answers to the series of questions that follow.

Style 2

You are given a passage to read, followed by a series of questions that comprise a statement relating to the passage. It is your task to say whether the statement is true or false or whether it is not possible to say whether the statement is true or false. You should base your decision only on the information or opinions given in the passage.

You should judge the statement to be true only if, for example, it can be calculated from the information given in the passage, it follows logically from the passage, it is a rewording of something contained in the passage or it is a valid summary of the passage or a part of it.

You should judge the statement to be false if, for example, it can be calculated from information given in the passage that it is wrong, if it cannot follow logically from the passage or if it contradicts something contained in the passage.

If you require more information than is contained in the passage before you can perform a calculation to test the statement or before you can tell whether the statement is true or false, then you should record your answer as 'cannot tell'.

You should work quickly and not spend too long on any one question. Work without interruption.

Do not use a calculator.

Do not turn over the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

THIS PAGE INTENTIONALLY LEFT BLANK

The table below shows the average propensity to save for three countries.

Country	Month	Savings (\$)/asp	Income (\$)
1	Jan	8	400
	Feb	120	600
	Mar	35	700
2	Jan	50	1,200
	Feb	45	900
	Mar	50	800
3	Jan	0.05 (asp)	1,100
	Feb	0.02 (asp)	7,700
	Mar	0.03 (asp)	6,600

1. What is the average propensity to save (aps) in the month of January for country 1 (savings/income = aps)?

50 0.02 25 0.2 5

Answer

2. Calculate the aps for the three-month period for country 2.

0.02 0.03 0.04 0.05

Answer

3. By how much would savings increase in the month of January in country 3 if incomes were to increase by \$400 and the aps were to remain the same?

\$100 \$75 \$55 \$20 \$5.5

Answer

4. Which country has the highest propensity to save in the month of March?

Country 1 Country 2 Country 3

Answer

Passage 1

Twenty-four billion pounds is invested in premium bonds and in the past 10 years the number of bonds in the draw has multiplied by seven. The chances of winning have recently changed from 27,500 to 1 to 24,000 to 1. Record sales have meant that a new machine to select winning numbers randomly was required. The predecessor took 50 minutes to complete the draw, while the new machine can complete the task in half that time. Each month there are 1 million winners.

5. The new machine identifies 40,000 winners a minute.

True False Cannot tell

Answer

6. Ten years ago there was £4 billion invested in premium bonds.

True False Cannot tell

Answer

7. Twenty-four billion pounds means twenty-four thousand million.

True False Cannot tell

Answer

The table below shows extracts from the six-monthly cash flow forecast for small company 'doing much better'.

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Total</i>
Income \$000							
Opening balance	(20)	(15.7)	(10.2)	(5.6)	(3.1)	0.6	
Sales receipts	17	19	22	14	16	17	105
Cash available	(3)	3.3	11.8	8.4	12.9	17.6	
Expenditure \$000							
Net wages	3.0	3.0	3.0	3.0	3.0	3.0	18.0
NI/pensions			2.7			2.7	5.4
Direct costs	6.8	7.6	8.8	5.6	6.4	6.8	42.0
Marketing/sales/ telephone/ computer	0.7	0.7	0.7	0.7	0.7	0.7	4.2
Transport/ travel	0.4	0.4	0.4	0.4	0.4	0.4	2.4
Rent/business rates	1.2	1.2	1.2	1.2	1.2	1.2	7.2
Professional fees	0.6	0.6	0.6	0.6	0.6	0.6	3.6
Total expenditure	12.7	13.5	17.4	11.5	12.3	15.4	82.8
Monthly + or (-)	4.3	5.5	4.6	2.5	3.7	1.6	

8. For how many months of the period covered by the cash flow is it forecast that the directors of 'doing much better' would need to arrange some kind of loan facility?

1 2 3 4 5 6

Answer

9. What percentage of the income from sales is expended on direct costs?

- 25% 30% 35% 40% 45%

Answer

10. Express total expenditure on net wages and direct cost as a ratio in its lowest form.

- 7:3 4:6 6:4 3:7 3:7

Answer

11. Were the cash flow to be extended to include the month of July, what would be the opening balance for that month?

- \$1,600 (\$1,600) \$2,200 (\$2,200) \$1,000

Answer

12. If net wages were to increase to \$8,000 during the months of April, May and June, by how much would you expect expenditure on NI/pensions to increase in June?

- \$7,200 \$6,300 \$5,400 \$4,500 \$3,600

Answer

Passage 2

The government wants 50 per cent of people aged 18–30 to go to university, and many of these new students are expected to study for shorter foundation degrees. These last for two years and combine study with hands-on experience while in paid relevant work. Already 20,000 people are taking foundation degrees, and half the courses available have over 50 students enrolled. Most foundation degrees are by distance learning and are part-time. While foundation degrees are not for the faint-hearted, they may appeal to many students who currently follow conventional university courses and who leave university with debts and then have to compete for a graduate-level job against foundation degree graduates with work-related experience.

13. The government wants half of all people aged 18–30 to study at university for a foundation degree.

True False Cannot tell

Answer

14. Because foundation degrees are by distance learning and part-time, self-discipline and strong motivation are critical if the student is to succeed.

True False Cannot tell

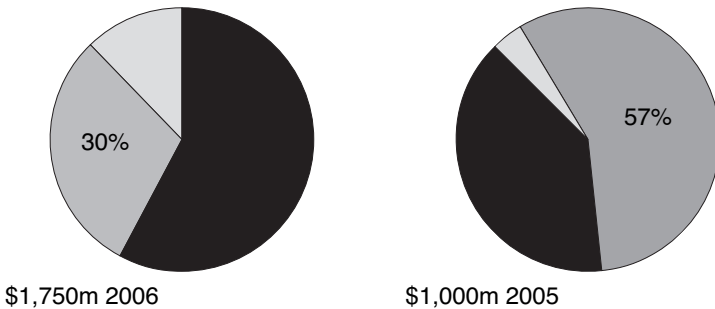
Answer

15. There are 200 foundation degree courses on which 50 or more students are enrolled.

True False Cannot tell

Answer

Analysis of contributions to gross profit by commodities






Key: Copper 
 Iron Ore 
 Coal 

Figure 9

16. Over the two years, how much did coal contribute to gross profits?

25m 40m 210m 250m 290m

Answer

17. If you take gross profit to equal revenue (from sales) minus cost of sales, then you can calculate the value of sales for 2005 from the given information.

True False Cannot tell

Answer

18. In real terms, how much more did iron ore contribute to the total gross profit in 2005 than in 2006?

45m 46m 47m 48m 49m

Answer

19. In the context of the passage, gross profit means:

- A highest amount without accounting for costs, taxes or depreciation
- B figure remaining after all relevant deductions have been made
- C a percentage of revenue
- D total sales of the company for each year
- E none of these

Answer

20. For the two years, express in its simplest form the ratio between the contribution of coal and non-coal commodities to gross profit.

1:12 1:11 1:10 1:9 1:8

Answer

Passage 3

Head lice are parasitic insects that live on the hair close to the human scalp and feed on blood. At any one time it is estimated that one in four children aged between 4 and 11 are suffering an infection. A louse lives for about 300 days and a female will lay over 2,000 eggs. Girls and boys are infected at a ratio of three to one. Lice cannot fly or jump. Girls are more prone to infection because their play tends to involve prolonged contact between heads. Children in urban schools are more likely to be infected, but the reason for this is unknown.

21. Examine an eight-year-old child's head in an urban school and there is a one in four chance of finding head lice.

True False Cannot tell

Answer

22. You would expect the ratio of infection for girls and boys to be the same in an urban and a rural school.

True False Cannot tell

Answer

23. It can be inferred from the passage that infections occur when lice crawl from one head to another.

True False Cannot tell

Answer

End of test

Comment on your score in Test 5

A score of 15 or more

If you are applying for a graduate position at one of the top banks or consultancies, then this is the only score that you can be content with. From my experience, a score over 15 should see you through to the next stage in the recruitment process, but this will vary from campaign to campaign and, like most things, is not a certainty.

A score between 10 and 14

This is a very wide category of score and will include the near-miss candidate as well as someone who did only moderately well. So, decide where you believe you are on this scale and set about a systematic programme of practice in order to improve your score.

How you interpret your score will of course depend on what you are applying for, and if you are seeking a non-financial position then it is possible that this score band will be sufficient to see you through. If you are applying for a financial position, then get down to some more practice under realistic test conditions. I have suggested suitable sources of such practice material at other points in the book.

A score below 10

You run the real risk of being judged a great candidate except for the maths! Employers are increasingly looking for all-round candidates, and this includes a reasonable numerical competency. Reflect on the reason for your score. Did you spend too long on questions and so run out of time before you could attempt sufficient questions? Do you need to improve your accuracy when working quickly under the pressure of an exam? Once you have settled on the cause, then either set about a programme of revision to master the key operations and/or practise more under realistic practice conditions. Above all else, do not give up. Keep working at it and you will witness a marked improvement in your performance in numerical tests.

English usage, reading comprehension and critical reasoning

These tests are my worst nightmare. I have a 2:1 degree and work experience but I feel freaked out by them.

(A graduate candidate)

I do really well in numerical tests but little better than the norm in verbal tests. Most companies are looking for candidates to achieve good scores in both and don't compensate a good score in one for a bad score in the other.

(Another graduate candidate)

If you concur with either of these sentiments, then rest assured that practice will help you to cope with nerves and will lead to a better score in these very common tests of ability.

I don't mean to overdo this point, as the real tests you face will have been designed and gone over very carefully, but the first thing to realize about verbal tests is that they lack the certainty of a numerical test. Language is more flexible and relative. In a maths test there is definitely a right answer and the rest are wrong, whereas in every verbal test there will be some candidate or another who feels that they have chosen an

answer that is more correct than the one the test author suggests. You just have to accept that there is less certainty in verbal tests. When a test author is designing a high-level verbal test, he or she has to draw very fine distinctions between the suggested answers, much finer distinctions than we draw in normal English usage. In some cases these distinctions can become so fine that they seem arbitrary, and to some extent they are; after all, it is not how we use language in the real world. They are obviously not this subjective, but think of them as a bit like a creative writing competition. In verbal tests like a creative writing test you sometimes have to learn to answer the questions according to the judge's view of what is right – and remember that the judge's decision is final!

A common error in the reading comprehension and critical reasoning tests is to err too much towards the 'cannot tell' suggested answer. In these tests you are typically given a passage and a series of questions or statements to which you must answer 'true', 'false' or 'cannot tell'. It is normal for the test instructions to advise you not to bring your own opinions or views to the exercise and to rely instead on the information contained in the passage. This simply means avoid relying on your own specialist knowledge or opinions to decide on the answer. What it does not mean is that you should be like some Cartesian and start to question everything. You need to arrive at a sensible balance and not apply too strict or too inflexible a test of proof.

It is important that you learn to pick up clues from the wording of the question or statement. If, for example, the question refers to 'a valid inference' or 'a premise', or asks 'is it necessarily the case...?', then by all means put on your logician's hat and apply strict criteria as to what can be deduced. However, if the question asks, for example, 'is it reasonable...?', 'on the balance of probability', 'might the author...?', then adjust your criterion accordingly and be prepared to apply a less strict test.

Practice will make a big difference to your approach to and performance in verbal tests. Set aside the necessary time, get hold of sufficient practice questions and allow yourself to become familiar with the typical demands placed on you in these common tests.

If English is not your first language

You are going to find some parts of every verbal test (in English) a greater challenge than a native speaker, so you need to adjust your programme of revision accordingly.

It is likely that the types of tests you will find most difficult are the reading comprehension and critical reading type questions. You might actually find yourself at an advantage in tests of English usage. This is because many native speakers of English have forgotten or never formally learned the rules of English grammar, while you will have.

To meet the challenge at an early stage, spend time reading quality newspapers and journals – if possible, daily. Doing so will help build your vocabulary and improve your proficiency at assimilating the meanings of the complex sentences and sentence structures that occur in the passages in these tests. Look up unfamiliar words. Practise writing 70-word reviews of articles found in these publications.

If you are dyslexic or suffer some other disability

If your ability to undertake any psychometric test could be adversely affected by a disability, then speak to the employer to which you are applying straight away and seek their advice on how your requirements can best be accommodated. Provide full details of your condition and be clear on the special arrangements you require.

You may be allowed extra time or a test reader or someone to record your answers. Braille or large-text versions of the test may be made available.

It is reasonable to expect your requirements to be given proper consideration and, wherever possible, accommodated. Evidence of your condition may be required. Be sure to raise your needs at an early stage in order that the organizers have time to accommodate them and so that you have sufficient time to obtain any formal proof of your condition that they may require.

In your search for work you are bound to come across SHL, a leading publisher of graduate tests including verbal ability tests. SHL's graduate products include:

- ability screening online;
- Fastrack;
- MGIB (Management and Graduate Item Bank).

SHL has an extensive client list, and giants like L'Oréal, Colgate-Palmolive, Ford, Sony, KraftFoods, Ericsson, Vodafone and many others use its psychometric products.

English usage

To write or speak English, or for that matter any natural language, involves rules of usage called grammar.

To speak or write correctly you do not need to recite these rules. Grammar classes at school can be distant, possibly a bad memory, and the content of these lessons long forgotten. To speak or write correctly all that is required is that you apply the rules correctly – that you implicitly follow the rules.

In the context of psychometric tests, however, the correct application of the rules is insufficient. To do well in these tests

you have to know the rules as well as follow them. For most candidates this means a certain amount of revision. It is well worth the effort. The candidate who knows the rules will be far more confident, will better realize what is behind the examiners' questions and will recognize the significance of the possibly subtle differences in the suggested questions.

What follows is a statement of the rules of English relevant to psychometric tests. The practice questions and tests that follow the glossary allow you to put the rules into practice.

At the intermediate level you will find more practice at this sort of question in the following Kogan Page testing titles:

How to Pass Verbal Reasoning Tests

The Ultimate Psychometric Test Book

The forthcoming title *How to Pass Advanced-level Verbal Tests* (to be published 2007)

Glossary

Adjective

An adjective adds detail to a noun or pronoun. To say, for example, that 'the record was scratched' is to add the adjective 'scratched' to the noun 'record'.

Adjectives can also limit or define. For this reason it is proper to think of them as modifiers. For example, if we say that 'Few people enjoy the game', the adjective 'few' limits rather than describes the noun 'people'.

Adverb

An adverb modifies a verb. It can detail, limit or define. If we say, for example, 'The yacht was sinking fast', the adverb 'fast' adds detail to the verb 'sinking'. 'Not' and 'very' are adverbs. An adverb can also add detail to an adjective ('very few') or another adverb ('very fast').

Note that adjectives and adverbs can be either phrases or words. In the statement ‘The people opposite me enjoyed the game’, the phrase ‘opposite me’ limits the noun ‘people’, so is an adjective.

Apposition

An appositional word or phrase is a noun or pronoun placed next to another noun or pronoun. It has the same meaning, but its function is to rename or identify the subject. For example, if I were to say, ‘The child, Junior, drank all the milk’, I would be introducing a one-word apposition: ‘Junior’. An example of an appositional phrase is ‘a one-year-old’ in the statement ‘The child, a one-year-old, drank all the milk’.

Article

Articles modify nouns. They are either indefinite or definite. ‘A’ and ‘an’ are indefinite articles because they modify a singular noun that is general. The article ‘the’ is particular, so is used to modify a particular noun.

Clause

A clause is a group of words within a sentence which contains a subject and a verb. If you were to say, for example, ‘They bought the camera in order to photograph the baby’ you have two clauses: first clause, ‘They bought the camera’ (subject ‘camera’, verb ‘bought’); second clause, ‘in order to photograph the baby’ (subject ‘baby’, verb ‘photograph’).

There are two types of clause:

Main clause

A main clause expresses a complete thought and makes sense on its own. The example ‘They bought the camera’ is a main clause.

Subordinate clause

A subordinate clause on its own does not make sense or express a complete thought. 'In order to photograph the baby' is an example of a subordinate clause.

Complement

The basic parts of a sentence are a subject, a verb and a complement. The complement follows the subject and verb to complete the meaning. It can be any word or phrase. For example:

'Scott went on holiday' (The complement is the noun 'holiday', 'Scott' the subject and 'went' the verb.)

'Describe the taste to me.' (The complement is the pronoun 'me', 'taste' the subject, and 'describe' the verb.)

Conjunction

A conjunction is a word that joins words, phrases or clauses. A conjunction can either treat clauses equally or make one more important. A coordinating conjunction connects without making either part more important, and usually involves a comma being placed before the conjunction. Examples are 'or', 'for', 'but' and 'nor'. A subordinating conjunction makes the clause it begins less important. Examples are 'as', 'because', 'when' and 'which'.

Direct object

A direct object is a complement to which the verb in a sentence is directed. It is either a noun or a pronoun, phrase or clause. In the examples provided in the entry for 'Complement', the words 'holiday' and 'me' are both direct objects of the verbs 'went' and 'describe' respectively.

Gerund

A gerund is used as a noun but is formed from a verb (so it is a verbal; see below). It ends in ‘-ing’ and often begins a phrase. For example:

‘Playing all day was exhausting.’ (The gerund is ‘playing’, formed from the verb ‘to play’ but used in this context as a noun.)

‘Smoking causes cancer.’

‘She loves cycling in the open countryside.’ (In this instance, the gerund is not at the beginning of the sentence.)

Indirect object

A sentence that contains an indirect object must also contain a direct object because the former indicates to whom or what the action of the verb is directed. Like a direct object, an indirect object is a complement. For example, take the sentence ‘Thomas wanted the videos for his students’. In this case the subject is ‘Thomas’, the verb ‘wanted’, the direct object ‘the videos’ and the indirect object ‘his students’.

Infinitive

An infinitive consists of the word ‘to’ followed by a verb used as either a noun, an adjective or an adverb. For example:

‘To smile is bliss’ (the verb ‘to smile’ is here used as a noun).

‘If only you were to smile’ (the verb ‘to smile’ is here being used as an adverb).

Watch out for split infinitives. A split infinitive has an adverb placed between the ‘to’ and the verb. A famous example is ‘to boldly go’. To avoid splitting the infinitive the phrase should read ‘to go boldly’.

Modifier

A modifier adds information and may take the form of a word, a phrase or a clause. Adjectives, adverbs and articles are examples of modifiers.

Misplaced modifier

A modifier is misplaced if, in a sentence, it modifies the wrong word; if it seems to describe a thing or person other than the thing or person it should describe. To correct the situation, you simply move the modifier. For example: ‘The reporter went to the press briefing to hear about the escaped lion with a tape recorder.’ This should have read: ‘The reporter with a tape recorder went to the press briefing to hear about the escaped lion.’

Dangling modifier

A modifier is said to dangle if it cannot be attached to the subject of the main clause, so unless the sentence is changed it has nothing to modify. For example:

‘Before writing a press release, the reader should be considered.’ The phrase ‘Before writing a press release’ is a dangling modifier because it does not have a subject to modify. To correct the situation the sentence would have to be changed so that it read, for example, ‘Before writing a press release, the writer should consider the reader.’

Noun

A noun is a word, a clause or a phrase that identifies a person, a place, an idea or a thing. There are five types of noun:

Proper noun

A proper noun names a particular person, place or thing. Examples of proper nouns are ‘Tony’, ‘Frances’ and ‘Taj Mahal’. Note that proper nouns always begin with a capital letter.

Common noun

A common noun identifies a general thing, a place or a kind of person, for example 'house', 'village green' or 'traffic warden'.

Collective noun

Collective nouns are singular but they identify groups of individuals, for example 'audience', 'class' and 'crowd'.

Concrete noun

Concrete nouns identify inanimate objects such as 'mineral', 'metal', 'paper' and 'feather'. Common nouns can also be concrete nouns; for example, chair and table are both common and concrete nouns.

Abstract noun

Abstract nouns identify qualities and ideals such as 'truth', 'justice' and 'intelligence'.

Participle

A participle is formed from a verb that is used like an adjective. A present participle ends in '-ing', while a past participle usually ends in '-ed', '-en' or '-t'. An example of a present participle is 'barking' in the sentence: 'The barking dog kept John awake.' An example of a past participle is 'celebrated' in the sentence: 'The celebrated climber gave a speech.'

Watch out for dangling participial phrases. A participial phrase begins with a participle. It is dangling if there is no noun or pronoun to which it adds detail. For example, the following statement contains a dangling participial phrase:

'Having finished the crossword, the dog went out into the garden.'

The participial phrase 'Having finished the crossword' is dangling because there is no sensible noun or pronoun to which

it relates. To make the statement sensible, you would need to provide a noun or pronoun. For example:

‘Having finished the crossword, Thomas went out into the garden with the dog.’

Parts of speech

There are eight basic types of word: nouns, pronouns, verbs, adjectives, adverbs, prepositions, conjunctions and interjectives.

Pronoun

A pronoun can be used in place of a noun. For example:

‘The water was warm, and it remained so all day.’

The pronoun ‘it’ has been used in this sentence in place of the noun ‘water’.

When replacing nouns with pronouns you must take care that you do not introduce ambiguity. For example: ‘The water remained warm all day and it was the warmest I can remember’. In this instance it is unclear whether it is the water or the day that was the warmest in memory. When there is a risk of ambiguity, the noun should be repeated. For example, in the above case the ambiguity is removed if we write: ‘The water remained warm all day, the warmest day I can remember’.

There are a great many types of pronoun and they are classified by function. The list here is not exhaustive:

Demonstrative pronouns: this, that, these, those

Interrogative pronouns: which, who, whom, what, whose

Personal pronouns: I, he, you, she, us, them

Possessive pronouns: my, mine, your, its, his, her, our, their

Indefinite pronouns: all, both, few, many, some

Sentence

A sentence must have a subject and a verb and express a complete thought. For example, the statement 'Opera began' has a subject ('Opera') and a verb ('began') but does not express a complete thought, so is not a sentence. The situation is easily corrected if we write, 'The opera began', as this does express a complete thought and so is a sentence.

'They cried' is an example of a sentence that comprises no more than a subject and a verb yet still expresses a complete thought.

Sentences are classified according to what they express or by their structure. In the context of psychometric tests, their classification according to structure is more relevant.

Sentences can be classified under four types of structure, as follows.

Simple sentences

A simple sentence comprises one main clause only, so remember that a main clause can be a sentence. Examples are usually short, for instance 'She hates grammar'; but they need not be, as the following example illustrates:

'The assistant editor made over 20 suggested alterations in the first few pages of text.'

Compound sentences

A compound sentence has multiple main clauses (two or more). For example:

First main clause:	'Come and see our range of mountain bikes
Connective:	and
Second main clause:	we will be pleased to demonstrate any model.'

Complex sentences

A complex sentence comprises one main clause and one or more subordinate clauses. For example:

Subordinate clause: 'After having a bath
Main clause: Thomas felt a lot better.'

Compound complex sentences

Compound complex sentences comprise two or more main clauses and one or more subordinate clauses. For example:

First main clause: 'Thomas so enjoyed the opera
First subordinate clause: which he had heard was good
Second main clause: that he vowed to go each week,
Second subordinate clause: assuming he could obtain tickets.'

In English usage tests, look out for two or more sentences that are joined by a comma or have no punctuation separating them. For example: 'The sun shone, they were very happy.' This kind of error is often examined and can be corrected with a full stop, a semicolon or the use of the conjunction 'and' in place of the comma.

Another commonly tested error involves a phrase or subordinate clause being presented as a sentence.

Subject

A subject is the word or words being talked about in the sentence. A subject is often a noun but can be a pronoun, a verbal noun (but not a participle), a phrase or clause. A subject has one or more verbs that tell what the subject is doing.

The subject is underlined in the following sentences:

'Oystercatchers are black and white wading birds.' (subject as a noun)

‘After showering, she went to work.’ (subject as a pronoun)

‘Rain making is impossible.’ (subject as a gerund phrase)

‘What is happening is quite the most extraordinary thing imaginable.’ (subject as a subordinate clause)

Tense

Tense shows the moment to which a verb refers. A simple tense can show the past, present or future, for example ‘he swam’, ‘he swims’, ‘he will swim’. What are called perfect tenses can be further subdivided (notice that all three contain past participles):

Present perfect tense

The present perfect shows that an action that began in the past is continuing or has been completed in the present, for example ‘Birthdays are always celebrated.’

Past perfect tense

The past perfect (or pluperfect) tense shows that an action was completed before a past point in time, for example ‘Gino had finished his birthday celebration by midnight.’

Future perfect tense

The future perfect tense shows that a future action will be completed after another future action, for example ‘By the time this book is published, my first child will have been born.’

In a verbal usage exam, always check that the tenses of a sentence are not mixed up. In particular, ensure that the verb in the subordinate clause has the same tense as the verb in the main clause.

A verb tells what someone, or something, is or does, its state or condition. There are two types of action verb, transitive and intransitive. ‘She publishes books’: ‘publishes’ is a transitive

verb because it is followed by a direct object. In the sentence ‘The river winds through the hills’, ‘winds’ is an intransitive verb as it is not followed by a direct object. There are also linking verbs, for example ‘The sea looks green’ and ‘she is accomplished’ – these tell us what someone or something is.

Questions in selection tests are sometimes on the characteristics of verbs, in particular the number, person and tense of verb.

Number

A verb must agree with the number of its subject. If, for example, the subject is plural, so must the verb be. Consider an example: ‘Mother and baby does well’ is incorrect because the subject is plural while the verb is singular.

Person

A verb can be in the first, second or third person (singular or plural) and serves to establish whether or not the subject is speaking, being addressed or being spoken about. The same verb form often applies to different persons or numbers:

‘We won the race.’ (plural first person)

‘You won the race.’ (singular or plural second person)

‘They won the race.’ (plural third person)

Tense

Tense shows whether or not the verb refers to the past, present or future. The verb of any subordinate clause must agree with the tense of the main clause. For example, the sentence ‘After he read the paper, Jon asks anyone else if they would like to read it’, is incorrect because the verb in the main clause is in the present tense while the verb in the subordinate clause is in the past tense.

Verbal

A verbal is derived from a verb but is not used as such. Verbals

are, instead, used as either nouns, adjectives or infinitives. See 'Gerund', 'Participle' and 'Infinitive' for examples.

Now practise these rules by attempting the following questions.

One hundred and thirty-five practice questions

Identify the correct sentences.

1. A. There are redundancies when the managing director arrived.
B There will be redundancies after the managing director arrived.
C After the new managing director arrived, there were redundancies.
D After the new managing director arrived, there will be many redundancies.
E None of these.

Answer

2. A As soon as the sales figures are available, the directors knew they had achieved their targets.
B As soon as the sales figures were available, the directors knew they had achieved their targets.
C As soon as the sales figures are available, the directors knew they have achieved their targets.
D None of these.

Answer

3. A Although the business plan looks promising, the bank manager suspected that the proposal is unlikely to succeed.
- B Although the business plan looks promising, the bank manager suspects the proposal was unlikely to succeed.
- C Although the business plan looked promising, the bank manager suspected that the proposal was unlikely to succeed.
- D None of these.

Answer

4. A If you were to contact the client you might find that they would buy.
- B If you are to contact the client you might find that they would buy.
- C If you were to contact the client you will find that they will buy.
- D None of these.

Answer

5. A While the photocopier is broken you will have to go across the road to the copy shop.
- B While the photocopier was broken you will have to go across the road to the copy shop.
- C When the photocopier is broken you went across the road to the copy shop.
- D None of these.

Answer

6. A My new colleague is the one who has the red car.
B My new colleague was the one whom had the red car.
C My new colleague will be the one who had the red car.
D None of these.

Answer

7. A The family will be eating their meal in the restaurant.
B The family was eating its meal in the restaurant.
C The family were eating their meal in the restaurant.
D None of these.

Answer

8. A Neither you nor I is able to make sense of this.
B Neither you nor I are able to make sense of this.
C Neither you nor I will be able to make sense of this.
D None of these.

Answer

9. A Bill, as well as the rest of his colleagues, is going to the annual office dinner.
B Bill, as well as the rest of his colleagues, are going to the annual office dinner.
C Neither of these.

Answer

10. A You girls over there what do you think you are doing.
B You girl over there what do you think you are doing.
C Neither of these.

Answer

Identify any *incorrect* sentences. The error for which you are looking is a dangling participle phrase.

11. A Having read of the outbreak of unrest in Africa, Joe heard the next day that war had broke out.
B The Prime Minister decided to recall Parliament; he faced a sea of very grave faces when he rose to make his statement.
C Having read of the outbreak of unrest in Africa, the next day war broke out.
D None of these.

Answer

12. A Wishing the department to succeed, new staff were taken on.
B It was clear that the Prime Minister had written off the by-election result; he intended to blame it on the recession.
C Neither of these.

Answer

13. A After having finished the exam, the candidates felt a great sense of relief.
B Feeling tired of the run, Hope decided to take a bath.
C My mother accused me of being mad, talking to myself all the time.
D None of these.

Answer

14. A The mosquitoes drove him mad, walking through the jungle.
B When we got to the house, having walked for many hours, we simply fell into bed and slept.
C Neither of these.

Answer

15. A Tests play an important role in the allocation of opportunities; their use, therefore, should be closely controlled.
B Woken from sleep by the bright sunshine, Mary decided to get up straight away.
C Beaten roundly in battle by the French army, the English decided to sue for peace.
D None of these.

Answer

Split infinitives – identify the *incorrect* sentence.

16. A From the age of three it was clear that Alison was going to quickly go to the top of the class.
B From the age of three it was clear that Alison was going to go quickly to the top of the class.
C Neither of these.

Answer

17. A After going on her training course Susan was skilful in the way she managed to coordinate the concurrent sales and marketing conferences.
B After going on her training course Susan was able to coordinate skilfully the concurrent sales and marketing conferences.
C Neither of these.

Answer

18. A It was clear that to precipitately press ahead would have been a mistake.
B It was clear that to press ahead precipitately would have been a mistake.
C Neither of these.

Answer

19. A He wanted, at an accelerated pace, to move ahead, but his boss prevented him from doing so.
B He wanted to move ahead at an accelerated pace, but his boss prevented him from doing so.
C Neither of these.

Answer

20. A The sales team wished to really work hard in order to achieve its targets.
B The sales team wished really to work hard in order to achieve its targets.
C Neither of these.

Answer

21. A Hoping to make amends, therefore, the Prime Minister called a special meeting of her cabinet.
B Hoping to, therefore, make amends the Prime Minister called a special meeting of his cabinet.
C Neither of these.

Answer

The following sentences test your understanding of the use of *apostrophes*. Identify the *correct* sentences. Note that more than one sentence may be correct.

22. A It's a good thing you gave the baby lamb it's extra milk during the night.
B It's a good thing you gave the baby lamb its extra milk during the night.
C It is a good thing you gave the baby lamb its extra milk during the night.
D None of these.

Answer

23. A Put the boys' shoes on otherwise their feet will get wet.
B Put the boy's shoes on otherwise their feet will get wet.
C Put the boys' shoes on otherwise his feet will get wet.
D None of these.

Answer

24. A Miles's achievement at cricket will long be remembered at his old school.
B Miles's achievements at cricket will long be remembered at his old school.
C Mile's achievement at cricket will long be remembered at his old school.
D None of these.

Answer

25. A The 1960s were a time when sexual liberation was first condoned.
B The 1960's were a time when sexual liberation was first condoned.
C The sixty's were a time when sexual liberation was condoned.
D None of these.

Answer

- 26. A The forecast for todays weather predicts rain, but tomorrow it's going to be fine.
- B The forecast for today's weather predicts rain, but tomorrow its going to be fine.
- C The forecast for todays weather predicts rain, but tomorrow its going to be fine.
- D None of these.

Answer

Some tests require you to decide between *parts of a sentence* and identify which is *correct*. With the following examples, your task is to identify which of the suggested parts complete the sentence correctly.

- 27. Central banks had to step in to prop up the European Exchange Rate Mechanism...
- A tomorrow if massive selling is not to threaten the French franc.
- B yesterday as massive selling threatened the French franc.
- C Neither of these.

Answer

- 28. ... cash offer under its recently announced enhanced dividend plan have come off best.
- A The shareholders who subscribed to the companys
- B The shareholder who subscribed for the company's
- C The shareholder who subscribed to the company's
- D None of these.

Answer

29. Receivers were called in but they will attempt to keep the company trading...

- A it all depends on whether there are sufficient funds to pay salaries due on the last day of the month.
- B and decide whether the company has sufficient funds to pay the salaries due on the last day of the month.
- C if there are sufficient funds to pay this month's salaries.
- D None of these.

Answer

30. ... they were frequently amended to allow for individual projects to be approved.

- A Policy guidelines, agreed by the committee, however,
- B Policy guidelines were agreed by the committee,
- C Policy guidelines were agreed by the committee; however,
- D None of these.

Answer

31. ... from the opposition when he called on them to change their minds and vote with the government.

- A He elicited a baying increase of support
- B He elated a tremendous increase in support
- C He elicited a baying crescendo of support
- D None of these.

Answer

Use of negatives

32. Only one of the following sentences is incorrect; which one is it?
- A 'You don't want not to do that, do you?'
 - B 'I should not bother washing the car, dear,' said a wife to her husband, to which he replied, 'I can't not do it; it looks disgraceful.'
 - C He was stopped by the beggar, but hadn't got any money.
 - D You should not think there are no examples when killing could be warranted.
 - E It's not impossible that we will be able to get away tonight before 7 o'clock.

Answer

Use of capitals

33. The capitalisation of three of the following sentences is incorrect. Which sentences are they?
- A A person who comes from France will usually speak French.
 - B It was William Shakespeare who first coined the phrase 'all the world's a stage'.
 - C The Government buildings have all been renovated.
 - D After the management buy-out, Nicholas Smith took over as the new Managing Director.
 - E When asked which book he would take on his desert island, he said '*The Catcher in the Rye*'.
 - F Every morning we had to swear allegiance to the american flag.
 - G The Church situated on the corner is called The Church of St John.
 - H Sitting in the conference room was a group of managers, directors and other senior executives.

Answer

34. Which of the following include incomplete sentences or do not form complete sentences?
- A He bought the Australian newspaper group. In order to complete his domination of the world's press.
 - B To err is human.
 - C 'Passing my driving test is my greatest achievement so far'. She said.
 - D The exhausted cyclist.
 - E She got tanned. And the sun shone at the weekend.
 - F Somewhere over the rainbow.
 - G Having worked, she now decided to retire.

Answer

Practice punctuation

35. Which of the following sentences is correctly punctuated?

- A For the sales conference, Alison had to check the seating, the lighting, the pen situation and the catering.
- B For the sales conference, Alison had to check the seating, the lighting, the pen situation, and the catering.
- C Neither sentence.

Answer

36. A There were four boys chosen for the job; Toby, Scott, Miles and Mark.
- B There were four boys chosen for the job: Toby, Scott, Miles and Mark.
- C Neither sentence.

Answer

37. A Although he could not be sure of his map reading, he decided to turn left at the next junction.
- B Although he could not be sure of his map reading he decided to turn left at the next junction.
- C Neither of these.

Answer

38. A Yes – he interjected, for he had to say exactly what he felt.
- B Yes; he interjected, for he had to say exactly what he felt.
- C Neither sentence.

Answer

39. A Max, Bill and Geoff were in the room. So which boy's hat is this?
B Max, Bill and Geoff were in the room. So which boys' hat is this?
C Neither sentence.

Answer

40. A The M25 is to be made into a 16-lane highway, many local residents find this unacceptable.
B The M25 is to be made into a 16-lane highway; many local residents find this unacceptable.
C Neither sentence.

Answer

41. A He decided to become a full time student.
B He decided to become a full-time student.
C Neither sentence.

Answer

42. A Would they need to ask the permission of the farmer to cross his land? it wasn't quite clear from the notice.
B Would they need to ask the permission of the farmer to cross his land; it wasn't clear from the notice.
C Neither sentence.

Answer

43. A The MP, Crispin Biggs-Williams, was the first to declare his anti European intentions by waving his jacket – a brightly striped old Wellington blazer – and was first into the opposition lobby.
B The MP Crispin Biggs-Williams, was the first to declare his anti Europeans intentions by waving his jacket – a brightly striped old Wellington blazer – and was first into the opposition lobby.
C Neither sentence.

Answer

44. A 'I am enjoying this' – he said, dreamily.
B 'I'm enjoying this' – he said, dreamily.
C Neither sentence.

Answer

Spelling

Underline the *correct* choice in the following sentences.

45. He was most complementary/complimentary about my new painting.
46. The effect/affect you had on the children was to excite them.
47. The tolling of the church bell, striking on the hour, every hour, was continuous/continual.
48. Before disciplinary action is taken, advise/advice should be offered to the member of staff.
49. By the time the starting pistol was fired, the runners were all ready/already for the race.

50. The birthday cake was divided among/between the many guests.
51. Children, put your toys back into/in to the toy-box.
52. You will find them either/(no word required) in the wardrobe, on the chair or in the chest of drawers.
53. After her engagement, she could not help but flout/flaunt her diamond ring at every opportunity.
54. For my holiday in Africa, I was reminded to take/bring my malaria tablets.
55. That case is quite different from/than the previous one we discussed.
56. Booking is not required for families with fewer/less than five members.
57. The pub is about half a mile farther/further down the road.
58. They will be delighted if Tony and I/me join them for lunch.
59. He had been lying/laying down for many hours before he was able to shake off his headache.

Word link

These questions comprise two lines of words, one above the other. On the top line are two words, while on the lower line there are six. Your task is to identify two words in the lower line, one in each half, which form an analogy when paired with the word in the upper line. You indicate your answer by underlining the two words on the lower line. Although an analogy is

when the words are in some way similar, note that in some questions the connection between the words is that they are opposites.

Example questions

60. HOT SPICY
confront sparse attack arrest thin ignore

The connection is that the words are synonyms.

61. FLAT ROUGH
even taxidermist mouse house rugged
hatchback

The connection in this case is that the words are opposites.

62. FAST FEAST
conversion rapid diet slow gluttony waterfall

The connection is that the opposite of 'fast' is 'slow' and the opposite of 'feast' is 'diet', but note how the connections are made diagonally across the top and bottom line.

63. HORSE CAR
putter rider jump pig driver cow

The connection in this example is that a horse has a rider and a car has a driver.

Practice questions

64. CRICKET BAT
golf locust vampire grasshopper club grass
65. SAILOR SURGEON
hornpipe ship trumpet xylophone hospital waltz

- | | |
|---|--|
| 66. RUN
sprint manage trot | CONTROL
walk regulate relax |
| 67. HIGH
intoxicate top above | LOW
buttock bottom beyond |
| 68. CLOWN
idiot king approximate | CIRCUS
roundabout palace pin |
| 69. ASSEMBLE
enjoy construct retreat | WITHDRAW
age retire superannuate |
| 70. JUDGE
date court horse | JOCKEY
bench club isotherm |
| 71. CONCUR
agree reject explain | ARGUE
propose dispute believe |
| 72. KING
kong emperor size | KINGDOM
empire penguin hall |
| 73. RABBIT
hearse horse hoarse | FUR
hair hare heir |
| 74. YACHT
care car dinghy | SAIL
truck petrol outboard |
| 75. DAWN
patrol stars light | SUNSET
moon boulevard dark |
| 76. GOVERNMENT
free anarchy conservative | CHAOS
liberal order command |
| 77. SOCIALIST
red blue black | ENVIRONMENTALIST
yellow white green |

- | | |
|--|---|
| 78. CHINA
clay tea Asia | FRANCE
polish wine Europe |
| 79. INEPT
complete apt competent | PERFECT
whole exodus defective |
| 80. DRAWS
sketches sledge attractions | ASSESES
praises amalgamate appraises |
| 81. NORTH
Wales Scotland west | SOUTH
Sussex Kent east |
| 82. CONGESTION
blockage superior
infection | INFERENCE
guess inferior conclusion |
| 83. DYE
cloth funeral shoe | TAN
coffin leather brown |
| 84. METAL
wood paper percussion | COIN
brass note news |
| 85. SEASONABLE
untimely decreasing
winter | RESPECTABLE
upright pepper disgraceful |
| 86. CENTIMETRE
metre meter meat | INCH
foot claw gas |
| 87. WEAK
month strong moon | GREEN
experienced environmental
pliable |
| 88. GENTLE
noble gradual genial | LENIENT
family humble affable |
| 89. FUNCTION
work deviant immigrate | DIGRESS
exodus toil deviate |

- | | |
|--|--|
| 90. BENEVOLENT
ridicule compliment
compliant | MALEVOLENT
defiant hedonism dilapidated |
| 91. METAPHOR
pious mystic undevout | SIMILE
irreverent devotee jinx |
| 92. IGNORAMUS
obfuscation transfer simple | ILLUMINATION
modest scarce encyclopedist |
| 93. DEFICIENT
modification perfection
temperance | MODERATE
gluttonous lapse stigma |
| 94. MALAPROPISM
solipsism behaviourism
communism | LINGUISTICS
mathematics psychology
engineering |
| 95. AMORPHOUS
abundance shower
harassment | NEBULOUS
torrent profusion enchantment |

Word swap

Underline the two words that must be interchanged to make the following sentences read sensibly. Do not attempt to alter the sentences in any other way.

96. The Health and Safety at Work Act 1976 is securing at aimed your health, safety and welfare.
97. Unlike most typewriters, when you come to the end of a press on a word processor you do not have to line the return key as the word processor brings the cursor to the next line automatically.

- 150 How to pass graduate psychometric tests
98. The equal who gets this job will have a firm commitment to person opportunities.
99. We are a housing London working in north and west association.
100. Holidays grade from 22 to 30 working days annually according to range and length of service.
101. Joyce fell kicking into the chair by the phone, back off her working boots, and went to sleep.
102. Nouns are things words and can name people, creatures, naming and feelings.
103. A subject is a group of sentences that all deal with a single paragraph.
104. In a vault near Paris is kept a small platinum cylinder which serves as the original reference for kilogram standards; copies are sold and made to laboratories worldwide.
105. National Health Service hospital private have contracts under which they are allowed to top up their pay to a limit of 10 per cent with extra earnings from consultants practice.
106. In his conference speech the Prime Minister worried to provide nursery places for every four-year-old; however, privately, the Education Secretary was pledged because her department had estimated each would cost in the region of £1,500 per annum.
107. The National Heritage Secretary began his speech by saying that 'There are at present about 30,000 listed buildings of which slightly under 50,000 are grade 1'.

108. Peter Taylor made a virtue of being impressive and his promotion to Chief Executive within three years of joining the company was widely expected but no less predictable.
109. The 24-year-old grandfather whose lord won a Victoria Cross in the First World War appealed to his fellow peers 'not to let our heads rule our hearts'.
110. Imperial porphyry is an exceptionally ancient stone with royal associations from the hard world because pharaohs and emperors chose it for the material from which to build their tombs.

Sentence sequencing

These questions require you to reorganize four sentences into the order in which they were originally written.

Example:

111.
 1. As he moved towards the stove he picked up the oven glove.
 2. He took care to make sure that the steam would not scald him and he turned off the gas.
 3. James looked up from the paper to notice that the kettle was boiling furiously.
 4. He poured the water into the teapot successfully.

Answer

3, 1, 2, 4

Try these:

112.
 1. Put out your arm when you see the bus coming.
 2. Tender the correct change to the conductor.
 3. Climb in.
 4. Tell the conductor where you want to alight.

Answer

--

113. 1. The engine roared into life.
2. The '57 Chevy careered dangerously into the sunset.
3. There was a stomach-churning grating of the gears.
4. The tyres squealed as it pulled away.

Answer

114. 1. The medieval period saw a large growth in the construction of cathedrals.
2. Its main characteristic was parallel stone mullions running the entire height of the windows.
3. One such was perpendicular Gothic.
4. They were built in a number of styles.

Answer

115. 1. The carrots cascaded from the scale pan into the bag.
2. The grocer deftly spun it before handing it over.
3. He pulled a paper bag from the hook.
4. Mr Benjamin placed it into his shopping bag.

Answer

116. 1. He proffered a flaring match.
2. 'Have you got a light?' came a once-familiar voice.
3. In its flickering light he recognized her as his former boss.
4. He tentatively asked 'Is your name Karen Moss?'

Answer

117. 1. The former did not reach the South Pole first, but died heroically on his return journey.
2. There were two Antarctic expeditions in 1912.
3. The latter, a Norwegian, was the first man to reach the South Pole, but in comparatively unremarkable circumstances.
4. Arguably, Captain Scott's was more famous than Amundsen's.

Answer

118. 1. Having bought the shares, the stockbroker transferred them to the client.
2. Before the Big Bang in 1986 the method of buying shares in the London market was different.
3. The broker then approached a jobber to buy the shares.
4. The client would approach a stockbroker.

Answer

119. 1. It is so called because being large, slow and buoyant when dead it was the 'right' whale to catch.
2. The decline has been the most pronounced among the larger whales, and scientists fear that a number of species, particularly the right whale, might become extinct.
3. In the 20th century, as fishing methods became more effective, the decline in the whale population occurred very rapidly.
4. Whales are now protected and their numbers are expected to rise.

Answer

120. 1. Frantically he tore at the coils around the neck.
2. Once the bedding was straight, she assured him, 'It's all right, the doctor's on his way.'
3. Gently his mother unravelled the sheet and kissed his fevered brow.
4. The anaconda coiled itself around his body, squeezing the lifeblood from him.

Answer

121. 1. The Institute claims to show that executive pay in the 1980s outstripped that on the factory floor.
2. That Britain's executives are threatening the rate of economic recovery by awarding themselves unwarranted pay rises.
3. The National Institute of Economic and Social Research has apparently confirmed what many have long suspected:
4. What is more, the study found that executive pay rises in the 1990s have little or no connection with company performance.

Answer

122. 1. After the war he served on the cruiser *Jamaica* in the West Indies.
2. The son of a naval engineer, Hugo Janier went to Dartmouth at the age of 13 in 1937.
3. His final post as a captain was in command of the guided-missile destroyer *Bristol*.
4. Graduating during the war, he saw service as a midshipman on the battleship *Rodney*.

Answer

123. 1. The suspect having been taken to the police station under arrest, as soon as practicable a decision will be made on whether to press charges.
2. In the magistrates' court the case will either be disposed of or adjourned to another sitting.
3. The suspect should be legally arrested by a police officer, designated official or citizen.
4. If charged, the suspect will be detained or released on bail to attend the magistrates' court at a given time on a given day.

Answer

124. 1. Alternatively, on the verdict of guilty, the defendant will be sentenced immediately or have the case adjourned for sentence in order to allow a pre-sentence report to be made.
2. At the end of the speeches the judge will sum up the case for the jury, who will then retire in the custody of the jury bailiff to make their deliberations.
3. Counsel for defence will make her closing speech.
4. Having given their verdict, the defendant, if she is acquitted, is then free to leave.

Answer

125. 1. The disaster was narrowly avoided and the track man received a medal and a reward for his bravery.
2. Imperceptibly at first, the train began to roll down the track, picking up speed.
3. In his eagerness to get clearance from the signalman the train driver climbed down from the cab, forgetting to apply the brakes.
4. Seeing another train on the tracks and the impending disaster, the track worker threw down his shovel, leapt into the cab and applied the brake.

Answer

126. 1. Befuddled, she made her way to the door, not knowing who it could be at this hour.
2. Suddenly, Colette was rudely awakened from her dream by an insistent knocking.
3. She had won the national lottery and was about to receive the cheque for £2 million from the television personality Joanna Lumley.
4. Her heart nearly missed a beat when she saw the tall bespectacled man in the leather trench coat outside.

Answer

127. 1. This decline is mainly due to a collapse in the 20th century in the price of tin.
2. Tin mining has been a major industry in Cornwall for over 2,500 years.
3. However, there is only one operating tin mine left in Cornwall.
4. In ancient times the Phoenicians traded tin with the Cornish.

Answer

128. 1. After all, the person behind you has been a learner too.
2. Don't let the fact that you are the first in the queue influence your judgement about when to go.
3. What you see when you look must decide your action, and nothing else.
4. As a learner you will be conscious of other drivers lining up behind you at junctions.

Answer

129. 1. This was the media response to the Preliminary Report on Homicide.
2. The picture painted by the report itself is more complicated.
3. 'The mentally ill commit one murder a fortnight', proclaimed the headlines.
4. Home Office records suggest that 89 people with probable mental illness committed a murder between 1992 and 1993, more than one a fortnight and 12 per cent of all murders.

Answer

130. 1. Input the relevant data, carry out a spell-check and print the document.
2. Turn on the computer and monitor, key in your password and ensure you have entered the word-processing software.
3. Name and save the file to an appropriate disk and exit the program.
4. Open a document file.

Answer

131. 1. A barrister will then be briefed to present the case in court before a judge.
2. The solicitor may advise that there is a case and write to the opponent's solicitor.
3. The potential litigant must first see a solicitor for preliminary advice.
4. If liability is disputed and cannot otherwise be resolved, pleadings will be issued and a date set for a court hearing.

Answer

132. 1. In the re-examination, the witness has the opportunity to rectify any damage done in cross-examination.
2. First, counsel examines his own witness-in-chief to ascertain facts.
3. There are three stages to examining a witness in court.
4. The witness is then made available to the opposition for cross-examination in which the witness's version of events is explored, clarified or demolished.

Answer

133. 1. Unlike many of his school friends who went to university, his family circumstances denied him any chance of higher education.
2. However, he was soon back in Manchester on the staff of the Evening Chronicle, before transferring to the rival paper, the *Manchester Evening News*, in a move that was to shape his career.
3. He therefore started to work on the *Blackpool Times* at the age of 17.
4. Educated at Manchester Grammar School, Lord Ardwick reads the *Guardian* every day of his life.

Answer

134. 1. He was the prime mover behind the EuroTEC controversial refinancing package, and his resignation was not unexpected.
2. Peter Heitman quit as Chief Executive as EuroTEC completed the final stage of its difficult restructuring plan.
3. It caused the entertainment company's shares to rise 4 pence to 126p.
4. The announcement stated that his replacement was Mr Montgomery, the ambitious and widely respected financial head of Paymore Bank, the principal lender to the troubled corporation.

Answer

135. 1. If you do, dial the number of the extension you want and you will automatically be connected.
2. Alternatively, you must hang on to be dealt with by an operator.
3. On certain telephone switchboards a recorded message will answer your call.
4. It will ask you if you know the extension you want and whether or not you have a touch-tone phone.

Answer

Five practice tests

Five realistic full-length practice tests follow. Take them as if they were real tests and stick to the time limits. To make them really realistic, set yourself the challenge of trying to better your last score. The level of difficulty of the tests gets progressively higher so you may find you cannot always beat your own score. You will almost certainly be getting better as you practise even if you do not get a higher score each time, because the goalposts are moving.

The tests are intended only as practice timed tests and to serve as an aid to learning, so don't read too much into the results. This sort of practice is a valuable part of your programme of self-study and will help you develop an effective exam technique under realistic conditions and help you further identify your strengths and address any weaknesses.

The later tests included a good number of questions at the level you might expect to get right if you were to obtain a good score in a real graduate test. What I mean by good is a score in the top 25 per cent of candidates. Setting the level of these timed tests is not a fine science, and while they may be appropriate for one candidate, I will not have got it right for others. You will find some hard questions to help you get used to the idea that you will not get them all right and should not spend too long on any one question.

Again remember the most important thing: you have to try really hard to do well in a psychometric test.

THIS PAGE INTENTIONALLY LEFT BLANK

Test 1: Practice test of English usage

Over the page you will find 25 questions. In some of the sentences, one of the underlined words or phrases is incorrect in terms of English usage. None has more than one error. If you find the error, choose the appropriate letter. If you find no error, choose the letter D. Place your answer in the box.

Do not turn the page until you are ready to begin. Allow yourself 15 minutes to attempt the questions. Work as quickly as you can.

THIS PAGE INTENTIONALLY LEFT BLANK

7. In comparison ^A with the ^B English, ^C it is always said that the Irish are ^D more poetic. No error

Answer

8. The line ^A managers were advised that they should ^B council their staff about the impending ^C takeover. ^D No error

Answer

9. Since I had ^A learnt to love her so much when she was alive, I now ^B treasure my ^C mother's-in-law picture. ^D No error

Answer

10. The ^A 1900s ^B were a time when many ^C Spanish-speaking immigrants ^D arrived in the United States. No error

Answer

11. There was scarcely ^A no one in the room ^B to whom I could ^C have ^D entrusted my secret. No error

Answer

12. ^A Taking vitamins is a way of ^B insuring long life, according to the ^C current ^D thinking. No error

Answer

13. Each of the ^A hotel's ^B 500 rooms were equipped with televisions, ^C televisions, baths, ^D kettles and double beds. No error

Answer

14. To do this gradually must be the ^A best ^B tactic, as to do otherwise ^C would be to jeopardize ^D the project. No error

Answer

15. Entering the house just before midnight, ^A the broken glass ^B was discovered by my wife and ^C me. ^D No error

Answer

16. A ^B 'How many gin and tonics would you be able to drink in an ^C evening?' ^D He asked. No error

Answer

17. Morphine and other ^A potentially addictive drugs are valuable ^B medically; ^C if abused, however, ^D it can cause untold damage. No error

Answer

18. According to the village gossip, the ^A local Vicar ^B had to be removed ^C from his post for misappropriating ^D funds. No error

Answer

19. We've tried to ^A deliberately stop ^B arguing in front of the children ^C because we have realized ^D it disturbs them. No error

Answer

20. The following people could be said ^A to have been ^B successful ^C leaders; ^D Margaret Thatcher, Churchill and Charles de Gaulle. No error

Answer

21. The ^A children's ^B toys were still laying ^C out on the table when the ^D the parents returned. No error

Answer

22. ^A Paula already left by the time ^B I arrived, so I realized that neither ^C she nor I was ^D going to get to the meeting in time. No error

Answer

23. Every man, woman or child on the ship ^A is able to fit ^B into _C the lifeboat, so no one should fear for his or her _D life. No error

Answer

24. ^A Which of these two houses belongs to ^B you? ^C Ours is the house _D on the left. No error

Answer

25. ^A Us women feel that we have suffered ^B too much at the ^C hands of _D men. No error

Answer

End of test

THIS PAGE INTENTIONALLY LEFT BLANK

Reading comprehension and critical reasoning

To answer reading comprehension and critical reading questions you must respond to a series of questions by referring to a passage. The questions require you to comprehend meaning and significance, assess the logic, identify good inference, distinguish a main idea from subordinate ones, single out a correct summary, evaluate interpretations, identify reasonable conclusions, pinpoint the writer's intention or determine the most likely conjectures and hypotheses.

The subjects covered may be drawn from, for example, science, business and current affairs. Typically, questions ask you to identify the key point, supporting points, reasons given, statements the author might agree or disagree with, the best summary of the passage or its conclusions. A series of suggested answers will follow each question and you must select one as correct.

Be careful: if you know something of the subject, you should not bring in information on the subject not contained in the passage. Even if you consider the passage factually incorrect, take the information as given and use it to answer the questions. Be extra careful if it is a subject on which you hold strong views. It is not your task to offer a critique of the passage.

Practice will help you get better at this increasingly common type of test question. You may also need to build your vocabulary. Do this by reading quality daily newspapers and weekly current affairs and scientific journals – lots of them. Get yourself a quality dictionary and thesaurus and discipline yourself to check every word the meaning of which you are unsure.

You will find further practice at this sort of question in another Kogan Page testing series title: *Graduate Psychometric Tests Workbook*.

THIS PAGE INTENTIONALLY LEFT BLANK

Test 2: Practice intermediate-level critical reasoning test

In this test there are a total of 29 questions and you are allowed 30 minutes in which to attempt them.

There are two styles of question. In the first, each question makes a statement relating to a passage. It is your task to say whether the statement is necessarily true or false, or whether you cannot tell if it is true or false. You must base your decision only on the information contained in the passage, which you are expected to accept as completely true.

In the second type, each question consists of two statements labelled A and B and there are four possible answers to the questions, namely: both statements are true, both are false, statement A is true while B is false, or B is true while A is false. Your task is to establish which of these situations applies and place your answer in the box or tick the appropriate box.

Do not turn over until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

Passage 1

To activate the alarm in the computer department you enter the code 1234. The code 2345 provides cover for the print room as well as the computer department. Code 3456 activates the alarm for the whole building, while 4567 covers the sections for accounts and personnel. Staff are only to know the number for the whole building and the department in which they work. In addition to 3456, Scott and Betty have to remember 4567.

1. Scott and Betty work in the same department.

True False Not possible to say

Answer

2. The maximum number of codes staff have to remember is two.

True False Not possible to say

Answer

3. The code 2345 provides protection for the print room only.

True False Not possible to say

Answer

Passage 2

Peter shared a father with Hilary but it is not Steven, the father of John, youngest son of Sylvia (who is Hilary's mother).

4. Sylvia had three children.

True False Not possible to say

Answer

5. Steven is the father of at least two of Sylvia's children.

True False Not possible to say

Answer

6. Sylvia is Peter's mother.

True False Not possible to say

Answer

7. John was the offspring of Steven and Sylvia.

True False Not possible to say

Answer

Passage 3

All scientific statements that are valid state something which is shown by its proof to be so.

8. The passage demonstrates that all valid statements are scientific.

TrueFalse Not possible to say

Answer

9. A valid scientific statement must have proof.

True False Not possible to say

Answer

10. To be scientific, a statement must be valid.

TrueFalse Not possible to say

Answer

11. A valid scientific statement must state something.

True False Not possible to say

Answer

Passage 4

The result of subtracting the square of one number from the square of a second gives the same number as is obtained by adding the two numbers, subtracting the first from the second and then multiplying the results of these two calculations.

12. Whatever the values, the same number is obtained.

True False Not possible to say

Answer

13. The first number is the same as the second.

True False Not possible to say

Answer

14. You could divide instead of multiply and get the same answer.

True False Not possible to say

Answer

Passage 5

Nothing can arise out of nothing and matter cannot vanish, but only be altered to take another form.

15. If you weigh something, burn it, then weigh it again, the difference is the weight of the smoke.

True False Not possible to say

Answer

16. There is a finite amount of matter in the universe.

True False Not possible to say

Answer

17. It is impossible for the amount of diamonds in the universe to decrease.

True False Not possible to say

Answer

18. The amount of matter in the universe will neither increase nor decrease.

True False Not possible to say

Answer

19. It should be possible to achieve the alchemists' dream of turning base metals into gold.

TrueFalse Not possible to say

Answer

Passage 6

Mrs Brewer, the office manager, was charged with responsibility for replacing the existing photocopier. The specifications were to remain the same in that the machine was to be able to make 50,000 copies a month, operate at least at 40 copies a minute and have the facility for double-sided copying, a feed tray and a sorter bin. She was told that she could consider ex-demonstration or new machines but must not purchase a service agreement.

Mrs Brewer embarked on the task with some apprehension, as she was well aware of the bad reputation of photocopier sales staff. She decided to write out a list of specifications and sent this to a number of companies requesting written quotations and details of their products. Soon afterwards, she started to receive calls from the company representatives offering her all kinds of deals.

20. Statement: A Mrs Brewer requested that the sales representatives telephone her.
 B She wanted a machine that could handle double-sided copying.

A Correct
 B Correct

A Correct
 B Incorrect

A Incorrect
 B Correct

A Incorrect
 B Incorrect

21. Statement: A A service agreement was to be part of the deal.
 B More features were required of the new machine.

A Correct
 B Correct

A Correct
 B Incorrect

A Incorrect
 B Correct

A Incorrect
 B Incorrect

22. Statement: A Mrs Brewer requires the sales representatives to send her two types of information.
 B She has a preference for a new machine rather than one that has been reconditioned.

A Correct
 B Correct

A Correct
 B Incorrect

A Incorrect
 B Correct

A Incorrect
 B Incorrect

23. Statement: A While she was apprehensive, Mrs Brewer was able to take some consolation from the fact that she was not solely responsible for the decision over which copier to purchase.
 B Photocopier sales staff have a reputation.

A Correct
 B Correct

A Correct
 B Incorrect

A Incorrect
 B Correct

A Incorrect
 B Incorrect

24. Statement: A Mrs Brewer's copier would need to undertake over half a million copies a year.
B A machine that could undertake just under 2,000 copies an hour would not meet her specification.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

Passage 7

Mr Waters, a tool-maker with Johnson & Matthew, left his machine to record in the company's accident book the fact that he had received a small splinter of steel in his thumb. This was a common accident for someone in his trade and he knew the company nurse would have to remove it, otherwise it was likely to become infected.

As he wrote down the circumstances of his accident he noticed a leaflet which read: 'The Health and Safety at Work Act is aimed at securing the health, safety and welfare of all workers. It requires employers to ensure the safety of their employees at work but also places a legal responsibility on every individual, whilst at work, to take care of their own and their colleagues' health and safety. Workers must cooperate with their employers to ensure that their place of work is safe. The Act allows that both employers and employees can be fined or sent to prison if they fail to fulfil their legal duties. In large organizations health and safety representatives are elected to represent the workers and to carry out safety checks.'

25. Statement: A The Act requires every individual to take care to avoid injury to themselves.
B Mr Waters has a legal duty to consider the safety of his fellow workers.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

26. Statement: A The Act requires all employers to have safety representatives.
B Mr Waters read that he would receive compensation for his injury.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

27. Statement: A Mr Waters' employers risk imprisonment or a fine if they do not maintain a safe place of work.
B Mr Waters' thumb required medical attention.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

28. Statement: A Mr Waters is required to record the circumstances of the accident in the accident book.
B Fortunately, the book was kept beside Mr Waters' machine.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

29. Statement: A The company provided a written explanation of the Health and Safety at Work Act.
B Splinters of metal were an occupational hazard for tool-makers.

A Correct
B Correct

A Correct
B Incorrect

A Incorrect
B Correct

A Incorrect
B Incorrect

End of test

THIS PAGE INTENTIONALLY LEFT BLANK

Test 3: Practice intermediate-level critical reasoning test

Over the page you will find a test comprising 36 questions. Complete the test in 25 minutes.

Your task is to decide from the information presented in a passage or flow diagram whether or not the statements or questions that follow are true or false, or that you cannot tell.

Do not turn the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

Passage 1

Research suggests that a sustained increase in spending on infrastructure is associated with an increase in macroeconomic growth, albeit not as convincingly in the data as intuition would suggest.

Question 1

High levels of investment spent on infrastructure are fairly well correlated with economic growth.

True False You cannot tell

Answer

Question 2

High spending tends to promote productivity gains and faster economic growth.

True False You cannot tell

Answer

Question 3

Building a new rail link might be beneficial to macro growth.

True False You cannot tell

Answer

Passage 2

Quarter 3, 1999 data showed that the US economy expanded by just 0.4 per cent against a 1.1 per cent rise in the first quarter of 1999.

All that year, forecasters argued that the US dollar was overvalued, yet it continued to appreciate against every other currency. Finally, in the third quarter the dollar weakened.

Question 4

US economic growth cooled markedly during 1999.

True False You cannot tell

Answer

Question 5

Depreciation of the US currency could easily gather momentum during the remainder of 1999.

True False You cannot tell

Answer

Question 6

Economic growth was a factor behind the appreciation of the US dollar.

True False You cannot tell

Answer

Question 7

An American coming to Europe in the autumn of 1999 found he could buy more with his dollars than when he visited Europe earlier that year.

True False You cannot tell

Answer

Passage 3

In a survey, companies' total cash flow position was found to have worsened slightly; 22 per cent reported cash flow problems compared with 19 per cent in the previous survey. However, this result is still well below the trend average of 29 per cent over the life of the survey.

Question 8

This still is a pretty impressive result.

True False You cannot tell

Answer

Question 9

The survey suggests that the respondents' cash flow management has improved over the life of the survey.

True False You cannot tell

Answer

Question 10

Late payment remains the main source of cash flow problems for respondents.

True False You cannot tell

Answer

Passage 4

Data show that two-thirds of companies surveyed advertised on the internet compared with just half of companies surveyed 18 months ago.

Question 11

The number of companies advertising on the internet has increased markedly.

True False You cannot tell

Answer

Question 12

In terms of its impact on company performance and possibly also in terms of its implications for the wider economy, the survey suggests that internet use has not yet reached its full potential.

True False You cannot tell

Answer

Passage 5

Sixteen per cent of firms report using the internet in central purchasing, of which almost 43 per cent report making slight cost savings, 5 per cent report making significant savings, 28 per cent suggest that it is too early to tell whether or not savings are being made, while the remaining respondents said that no savings were being made.

Question 13

It is fair to conclude that, for some respondents, use of the internet has resulted in a reduction in the cost of central purchases.

True False You cannot tell

Answer

Question 14

The majority of respondents who used the internet for central purchasing either saw no cost benefit or reported that it was too early to tell.

True False You cannot tell

Answer

Question 15

The majority of respondents used the internet for central purchases.

True False You cannot tell

Answer

Passage 6

Sales performance varies by industrial sector in terms of sales and orders: retailing performed least well and business and other services performed best. Industries with above sector-average sales include construction, wholesale, and hotel and catering. While manufacturing sales remain below the industrial sector-average, sales have improved for this and the last three years.

Question 16

Business and other services outperform other sectors in sales and orders.

True False You cannot tell

Answer

Question 17

Manufacturing continues to pick up.

True False You cannot tell

Answer

Question 18

Considerable price pressures exist in retailing.

True False You cannot tell

Answer

Question 19

Transport and communication and hotel and catering were the only sectors reporting above sector-average sales.

True False You cannot tell

Answer

Question 20

The sector 'Business and Other Services' included wholesale.

True False You cannot tell

Answer

Passage 7

Net export balance sharply rose to 16 per cent following net balances of 4 per cent each in the previous two surveys; 41 per cent of companies reported higher export orders against 25 per cent reporting lower export orders, compared with levels of 33 per cent and 29 per cent six months ago.

Question 21

More companies report lower export orders than six months ago.

True False You cannot tell

Answer

Question 22

All companies are expanding sales of goods and services abroad.

True False You cannot tell

Answer

Question 23

More companies have reported higher export orders.

True False You cannot tell

Answer

Question 24

Export orders show surprise growth.

True False You cannot tell

Answer

Passage 8

Companies surveyed reported a negative net price balance of 3 per cent in the second half of 2000. Nineteen per cent of firms reported raising prices while 22 per cent reported cutting prices. This result extends the period of price cuts to three years.

Question 25

All companies are lowering the prices that they charge their customers.

True False You cannot tell

Answer

Question 26

Falling prices are squeezing profits.

True False You cannot tell

Answer

Question 27

The period of price cutting continued into the second half of 2000.

True False You cannot tell

Answer

Question 28

It is no coincidence that the percentage difference between firms that report raising prices and those cutting prices is the same as the second half percentage figure for negative net price balance.

True False You cannot tell

Answer

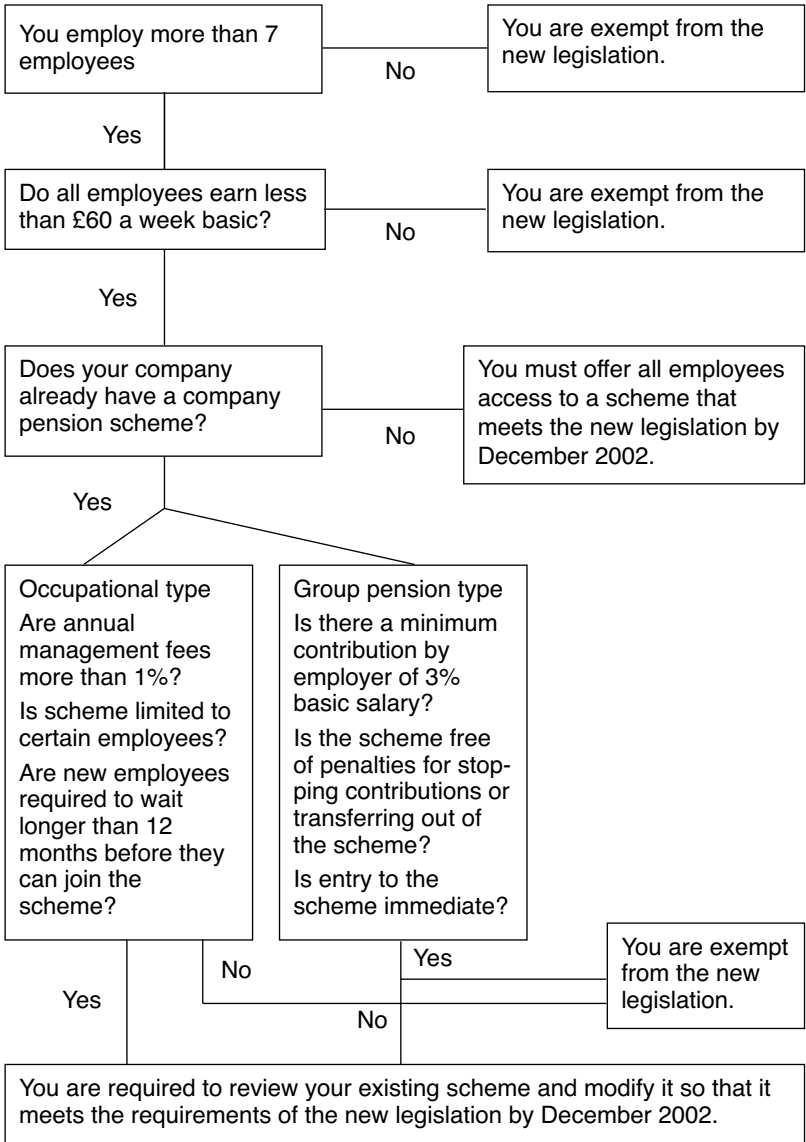


Figure 10 Action an employer must take following new government legislation on employee pensions

Questions

29. You employ six employees and currently offer an occupational-type scheme that has a management fee each year of 1 per cent.

No action required

Action required

Not enough information provided to decide

Answer

30. Your current occupational scheme is not offered to full-time employees.

No action required

Action required

Not enough information provided to decide

Answer

31. Your company has a group pension scheme. Directors of the company receive a contribution of 10 per cent of basic salary after three months' service. All staff receive a minimum employer contribution of 3 per cent. The scheme is free of penalties and all staff may join immediately.

No action required

Action required

Not enough information provided to decide

Answer

32. Nine out of 13 of your employees earn less than the legislatively exempt minimum salary.

No action required

Action required

Not enough information provided to decide

Answer

33. Entry to your occupational scheme is offered to all employees. There is no annual management fee and employees wait 10 months to join.

No action required

Action required

Not enough information provided to decide

Answer

34. Your company already has a pension scheme that allows new employees to join immediately and has no penalties for stopping or starting.

No action required

Action required

Not enough information provided to decide

Answer

35. You offer a group pension scheme for all employees after three months' service with no exit penalties.

No action required

Action required

Not enough information provided to decide

Answer

36. A member of staff declines to join your company complaint scheme.

No action required

Action required

Not enough information provided to decide

Answer

End of test

Test 4: Practice advanced-level reading comprehension and critical reasoning test

Over the page you will find 23 questions relating to five passages. Allow yourself 25 minutes to complete the test. Do not turn the page until you are ready to begin.

In this test you are presented with a series of short passages each followed by three, four or sometimes five statements or questions relating to them. Your task is to pick one of the suggested responses as the correct one to the statement or question.

Be especially careful if you know lots about the subject covered by a passage as you are then more likely to involve your personal knowledge or opinions and as a result risk getting the question wrong!

In the real tests you have very little time to read the passage and answer the questions.

Do not make the mistake of not practising if you find these questions easy when you are free of the pressure of time. In the real test you will only have time for one careful reading. You will have to switch really fast between vastly different subject matter with each passage and keep up a very high level of concentration right to the end. This all takes practice to get really good at.

Do not turn the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

Passage 1

A paper plane should be made by folding a single sheet of A4 paper and not involve any cuts or the addition of anything such as sticky tape, glue or weights. The indoor flight record for such a plane is over 60 metres. The aerodynamics involved are as complex as the principles behind any plane but the secret to one built from paper is ease of construction, folds that impart strength, the correct location of the centre of balance, minimum drag and maximum lift. The best designs seem to involve a blunt nose made from multiple folds. This makes the craft strongest at the point of impact in the hopefully many crash landings. It also sets the centre of gravity further back than on a pointed nose design and so affords more stable flight. The wing shape that affords the longest flights is delta, cambered upwards to increase lift by forcing the air as it passes over the wing through a greater angle. A plane with such wings is capable of flight in excess of 20 seconds when launched from a height of 2 metres in still air.

Q1 The nose and wing shape are not key to the design of a successful paper plane.

True False Cannot tell

Answer

Q2 Outside, where wind conditions and thermal lifts may be harnessed, flights may last considerable longer and go much further than 60 metres.

True False Cannot tell

Answer

Q3 The point that wings should be slightly convex so that they increase lift is made in the passage.

True False Cannot tell

Answer

Q4 The case made in the passage would be greatly weakened if a paper plane were made using cuts, glue and weights.

True False Cannot tell

Answer

Passage 2

We may not much like the fact but we are 99.9 per cent identical. This is because 99.9 per cent of our DNA is common to every person, and the Human Genome Project is rightly celebrated for sequencing it. But what of the remaining 0.1 per cent? It is far more significant than one might assume, because if it were not for this minute percentage, there would be no individual differences. We would be clones. These variations in the human code account for all individual idiosyncrasies. They are responsible for the differences between ethnic and racial groups. Perhaps most interesting of all, they also explain why some of us enjoy good health while others are more susceptible to many common diseases. It is thought that the mapping of the remaining 0.1 per cent of human DNA will hasten the identity of new ways to treat common ailments such as obesity, cancer and heart disease. The work will prove particularly useful in the search for new diagnostic tests, the customizing of treatments to best suit an individual's genetic code and, ultimately, the development of new drugs that target the DNA linked to a particular disease. The task of charting the inherited differences in the human genome has fallen to 200 scientists drawn from nine countries across every populated continent.

Q5 Sequencing is mentioned in the passage in relation to the work of the Human Genome Project.

True False Cannot tell

Answer

Q6 The scientists responsible for charting inherited differences in the human genome will screen people drawn from every populated continent.

True False Cannot tell

Answer

Q7 The conclusion that some of us enjoy good health while others are more susceptible to many common diseases relies on the premise that we are 99.9 per cent genetically identical.

True False Cannot tell

Answer

Q8 It can be inferred from the passage that the work will speed up the development of new treatments.

True False Cannot tell

Answer

Passage 3

He that is nourished by the acorns that he picked up under an oak, or the apples he gathered from the trees in the wood, has certainly appropriated them to himself. Nobody can deny but the nourishment is his. I ask, then, when did they begin to be his? when he digested? or when he ate? or when he boiled? or when he brought them home? or when he picked them up? And it is plain, if the first gathering made them not his, nothing else could. That labour put a distinction between them and common. That added something to them more than Nature, the common mother of all, and so they became his private right...

His labour hath taken it out of the hands of Nature where it was common, and belonged equally to all her children, and hath thereby appropriated it to himself...

It will, perhaps, be objected to this, that if gathering the acorns or other fruits of the earth, etc, makes a right to them, then anybody may engross as much as he will. To which I answer, Not so. The same law of Nature that does by this means give us property, does also bound that property too. 'God had given us all things richly.' Is the voice of reason

confirmed by inspiration? But how far has He given it us – ‘to enjoy’? As much as anyone can make use of to advantage of life before it spoils, so much he may by his labour fix a property in. Whatever is beyond this is more than his share, and belongs to others...

He who gathered as much of the wild fruit, killed, caught, or tamed as many of the beasts as he could – he that so employed his pains about any of the spontaneous products of Nature as any way to alter them from the state Nature put them in, by placing any of his labour on them, did thereby acquire a property in them, but if they perished in his possession without their due use – if the fruits rotted or the venison putrefied before he could spend it, he offended against the common law of Nature, and was liable to be punished: he invaded his neighbour’s share, for he had no right farther than his use called for any of them, and they might serve to afford him conveniences of life.

John Locke, Section V, *An Essay Concerning the True Original, Extent, and End of Civil Government* (1690)

Question 9

The primary purpose of this passage is to:

- A Describe the way in which we lived before civilization
- B Promote the equal sharing of the world’s scarce resources
- C Investigate the basis for legitimate private property
- D None of these

Answer

Question 10

The objection that Locke’s argument allows one to ‘engross as much as he will’ fails because:

- A God has given us all things richly so we can take as much as we like
- B The fruit will rot and the venison will putrefy so there is no point taking more than you need
- C The law of Nature dictates that if we take more than we can use, we have taken something that belongs to others
- D None of these

Answer

Question 11

Which of the following words describe the tone of the passage?

- A Humorous
- B Contrived
- C Journalistic
- D None of these

Answer

Question 12

Locke suggests that it is unequivocal that we have appropriated something for ourselves if we:

- A Collected it and carried it away
- B Have eaten and digested it
- C Stored it for winter
- D None of these

Answer

Question 13

In the passage Locke argues that you can acquire something as your own property if you:

- A Share it with others
- B Inherit it
- C Seize a neighbour's share
- D. None of these

Answer

Passage 4

The produce of labour constitutes the natural recompense or wages of labour.

In that original state of things, which precedes both the appropriation of land and the accumulation of stock, the whole produce of labour belongs to the labourer. He has neither landlord nor master to share with him.

Had this state continued, the wages of labour would have augmented with all those improvements in its productive powers, to which the division of labour gives occasion. All things would gradually have become cheaper. They would have been produced by a smaller quantity of labour; and as the commodities produced by equal quantities of labour would naturally in this state of things be exchanged for one another, they would have been purchased likewise with the produce of a small quantity.

But though all things would have become cheaper in reality, in appearance many things might have become dearer than before, or have been exchanged for a greater quantity of other goods. Let us suppose, for example, that in the greater part of employments the productive powers of labour had been improved tenfold, or that a day's labour could produce only ten times the quantity of work which it had done originally, but that in a particular employment they had been improved only to double, or that a day's labour could produce only twice the quantity of work which it had done before. In exchanging the produce of a day's labour in the greater part of employments, for that of a day's labour in this particular one, ten times the original quantity of work in them would purchase only twice the original quantity in it. Any particular quantity in it, therefore, a pound weight, for example, would appear to be five times dearer than before. In reality, however, it would be twice as cheap. Though it required five times the quantity of other goods to purchase it, it would require only half the quantity of labour either to purchase or to produce it. The acquisition, therefore, would be twice as easy as before.

Adam Smith, *Of the Wages of Labour*, Chapter VIII, Volume 1, *The Wealth of Nations* (1776)

Question 14

The passage addresses which of the following issues?

- A The effect of division of labour on productive power
- B The effect on prices if labourers were to keep all the product of their labour
- C The effect on prices if labourers kept all the product of their labour and their labour benefited from improvements in productive power.
- D None of these

Answer

Question 15

If labourers were to keep all the product of their labour, Smith states things would become cheaper in:

- A Reality
- B Appearance
- C The marketplace
- D None of these

Answer

Question 16

If the productive power of labour is improved tenfold, Smith claimed that:

- A Things would appear five times cheaper
- B Things would in reality be twice as cheap
- C Things would appear five times dearer
- D None of these

Answer

Question 17

Smith holds that commodities would continue to be exchanged in equal quantities only if:

- A One product benefited more from improvements in productive power than the other
- B Labour was divided, land appropriated and stock accumulated
- C Both products benefited equally from improvements in productive power
- D None of these

Answer

Question 18

According to Smith, while in reality things would become cheaper, in appearance:

- A All things would become dearer
- B Some things would become dearer
- C Some things might become dearer
- D None of these

Answer

Passage 5

Now suppose that the average amount of the daily necessities of a labouring man require six hours of average labour for their production. Suppose, moreover, six hours of average labour to be also realised in a quantity of gold equal to three shillings. Then three shillings would be the Price, or the monetary expression of the Daily Value of that man's Labouring Power. If he worked daily six hours he would daily produce a value sufficient to buy the average amount of his daily necessities, or to maintain himself as a labouring man.

But our man is a wages labourer. He must, therefore, sell his labouring power to a capitalist. If he sells it at three shillings daily, or 18 shillings weekly, he sells it at its value. Suppose him to be a spinner. If he works six hours daily he will add to the cotton a value of three shillings daily. This value, daily added by him, would be the exact equivalent for the wages, or the price of his labouring power, received daily. But in that case no surplus value or surplus produce whatever would go to the capitalist. Here, then, we come to the rub...

The value of the labouring power is determined by the quantity of labour necessary to maintain or reproduce it, but the use of that labouring power is only limited by the active energies and the physical strength of the labourer... Take the example of our spinner. We have seen that, to daily reproduce his labouring power, he must daily reproduce a value of three shillings, which he will do by working six hours daily. But this does not disable him from working ten or twelve or more hours a day. But by paying the daily or weekly value of the spinner's labouring power, the capitalist has acquired the right of using the labouring power during the whole day or week. He will, therefore,

make him work, say, daily for twelve hours. Over and above the six hours required to replace his wages, or the value of his labouring power, he will, therefore, have to work six other hours, which I shall call surplus labour, which surplus labour will realise itself in a surplus value and a surplus produce. If our spinner, for example, by his daily labour of six hours, added three shillings' value to the cotton, a value forming an exact equivalent to his wages, he will, in twelve hours, add six shillings' worth to the cotton, and produce a proportional surplus of yarn. As he has sold his labouring power to the capitalist, the whole value or produce created by him belongs to the capitalist, the owner... of his labouring power.

Karl Marx, *Production of Surplus Value, Section VIII, Wages, Price and Profit* (1865)

Question 19

Marx holds that 'the rub' is:

- A That the spinner sells his labouring power at its value
- B That the spinner works a 12-hour day
- C That the spinner's surplus value goes to the capitalist
- D None of these

Answer

Question 20

With which of the following ideas would the author probably agree?

- A Industrial profit is a legitimate part of the value of the commodity
- B Industrial profit is only a different name for the unpaid labour enclosed in a commodity
- C If wages fall, profits fall; if wages rise, profits will rise
- D None of these

Answer

Question 21

Identify from the following a correct restatement of the main idea of the passage:

- A The amount of surplus value depends on the ratio in which the working day is prolonged over the time it takes for the working man to replace his wages
- B A general rise in the rate of wages would result in a fall in the general rate of profit
- C It is the constant tendency of capitalists to stretch the working day to its utmost physically possible length
- D None of these

Answer

Question 22

Which of the following statements best describes the approach taken by Marx in the passage?

- A He refutes a stated view
- B He sets out to be expansive
- C His objective is to compare and contrast
- D None of these

Answer

Question 23

According to Marx, the spinner's daily necessities require:

- A Three shillings
- B Six hours of average labour
- C A 12-hour working day
- D None of these

Answer

End of test

Test 5: Practice advanced-level reading comprehension and critical reasoning test

This test comprises 30 questions and you are allowed 30 minutes in which to attempt them.

In this test you are presented with a series of short passages each followed by three, four or sometimes five statements or questions relating to them. Your task is to indicate whether the statement or question is true or false, or you cannot tell.

With this type of question you sometimes find yourself saying something is true or false that you know not to be the case or confirming as true or false something with which you do not personally agree. This is because you rely only on the content of the passage to answer the questions. Be especially careful if you know lots about the subject covered by a passage as you are then more likely to involve your personal knowledge or opinions and as a result risk getting the question wrong!

In the real tests you have very little time to read the passage and answer the questions.

Do not make the mistake of not practising if you find these questions easy when you are free of the pressure of time. In the real test you will only have time for one careful reading. You will have to switch really fast between vastly different subject matter with each passage and keep up a very high level of concentration right to the end. This all takes practice to get really good at.

This question type has become very popular in recent years and features in many graduate and management psychometric tests. With practice you can show a considerable improvement in your score.

Do not turn the page until you are ready to begin.

THIS PAGE INTENTIONALLY LEFT BLANK

Passage 1

European road congestion is forecast to grow by 70 per cent by 2010 and the total distance travelled by rail is expected to increase 60 per cent by 2024. Despite the obvious increase in demand for space on our roads and trains, governments are failing to match forecast growth with investment in either mode of transport. In the 10 worst areas the problems are already chronic, with immediate investment needed if sufficient capacity is to be created to cope even with current demand. New roads and tracks, and longer platforms that can handle longer trains, are already needed to relieve bottlenecks, congestion and severe overcrowding, especially during peak hours. Despite demand, there are no plans to significantly expand road and rail networks, and indeed closures and cuts in funding are on the agenda in a number of member states. There are considerable doubts that those few projects that are currently supported by governments will ever be completed because ministers are refusing to say how much public money they will receive.

Q1 You can infer from the passage that people are giving up their cars to undertake journeys by train.

True False Cannot tell

Answer

Q2 Train users in Europe face a future of overcrowded networks, higher fares, slower journey times and in some states closures.

True False Cannot tell

Answer

Q3 The latter half of the passage is taken up with the issue of the diminutive public investment in the expansion of the railways.

True False Cannot tell

Answer

Q4 In the worst ten areas immediate investment is already needed because during peak periods they suffer bottlenecks, congestion and severe overcrowding.

True False Cannot tell

Answer

Q5 From a reading of the passage it is hard to arrive at any other conclusion but that at home European travellers face a bleak future of overcrowding and congestion.

True False Cannot tell

Answer

Passage 2

Recent research has provided further stark evidence of the educational apartheid dividing the achievements of bright children from low- and high-income families. The study followed for many years the progress of a sample of almost 40,000 of the brightest children. Two-thirds were drawn from low-income families. The research found that almost all the able children from high-income families realized three or more A grades in exams at the age of 18 years. But it was found that only 1 in 4 of the most able children from low-income families achieved similar grades. The effect of this inequality puts the low-income, bright child at a considerable disadvantage. A bright child from a high-income family was found to have a 1 in 2 chance of gaining a place at one of the best universities. A bright child from a low-income family had only a 1 in 10 chance of gaining such a place. The bright children from high-income families were themselves very likely to enjoy a high income in their working life. A significant majority of the bright children from low-income families failed to earn above the national average wage.

Q6 The statement that 'bright children from poor homes are failing to get the same grades as their rich counterparts' expresses the main theme of the passage.

True False Cannot tell

Answer

Q7 The primary objective of the passage was to report the findings and the reaction to the recent research.

True False Cannot tell

Answer

Q8 It is stated in the passage that the divide in the educational achievement of rich and poor children was already known about.

True False Cannot tell

Answer

Q9 You can rightly describe the tone of the passage as either anecdotal or dogmatic.

True False Cannot tell

Answer

Q10 It can be inferred from the passage that a child needed parental encouragement and resources such as a quiet place to study to realize his or her educational potential.

True False Cannot tell

Answer

Passage 3

Until recently almost everything we knew about the giant squid was deduced from dead specimens washed up on beaches or found in the stomachs of whales. Very occasionally there were sightings and even reported attacks on boats. The largest specimens are believed to reach almost 18 metres. A Japanese team decided to use sperm whale migration patterns to try to locate and film the squid in their natural habitat. They made up a fishing line and baited it with hooks and fish. On the

line they also hung lights and a camera and they lowered it a kilometre into the ocean at a location well known for sightings of sperm whales. They reasoned that where sperm whales congregate might be a good place to film the squid. Their plan worked. When they recovered their line and examined the film they watched shoot out from the dark a giant squid with tentacles outstretched and a snapping beak to attack one of the bated hooks. The squid became caught and struggled furiously until it was able to free itself. The team believe their film is the first ever of a giant squid alive in its natural habitat. They hope that careful study of the footage will reveal much new information about the behaviour of this elusive creature.

Q11 The observed giant squid was 18 metres in length.

True False Cannot tell

Answer

Q12 It can be inferred from that passage that the researchers reasoned that where the whales congregate might be a good place to film the squid.

True False Cannot tell

Answer

Q13 The researchers will be able to conjecture that the giant squid is a vigorous hunter.

True False Cannot tell

Answer

Q14 It can be deduced from the passage that giant squid ordinarily live at depths of 1,000 metres.

True False Cannot tell

Answer

Q15 Where sperm whales congregate is a good place to film giant squid because sperm whales eat them.

True False Cannot tell

Answer

Passage 4

We all know that our criminal system is failing but how many of us know the extent of the failure? Do you know, for example, that nine out of ten offenders reoffend within two years of completing their punishment? No wonder that our prisons are so overcrowded that programmes of education and rehabilitation have been abandoned. Staff simply do not have the time or resources to run them any longer. An offender rarely gets a prison sentence on the occasion of their first conviction. They are far more likely to be sentenced to a curfew monitored by an electronic tag and police surveillance. Many do not even wait for the end of their period of curfew before they reoffend. Large numbers breach their curfew repeatedly and even remove their electronic tags. But by the time they have appeared before the judge on the third or fourth occasion, all hope that community-based punishments will work is abandoned and the persistent offender is sentenced to a period of imprisonment.

Q16 The main claim of the passage is that our criminal system is failing to prevent reoffending.

True False Cannot tell

Answer

Q17 You can infer from the passage that the author believes that a major objective of punishment is to deter reoffending.

True False Cannot tell

Answer

Q18 Under the current system even the fear of being caught and punished again is failing to deter.

True False Cannot tell

Answer

Q19 Rehabilitation programmes have been abandoned because they do not prevent reoffending.

True False Cannot tell

Answer

Q20 From the passage it is clear that we need to find alternative workable solutions to tackle this very real challenge to society.

True False Cannot tell

Answer

Passage 5

Colorectal cancer occurs in the colon or rectum. It is more common among men than women and the majority of cases occur in the over-50s. Triggers are thought to be little or no exercise and excessive weight. A propensity for the disease is also known to be inherited. Diet is believed to play an important role both in the risk of developing the disease and in its prevention. It used to be thought that a diet high in fibre greatly reduced the risk of colorectal cancer; however, it is now thought that eating too much red meat and milk products has a much stronger, unfortunately, negative association and increases the risk of the disease notably. It so happens that people with high-fibre diets eat less red meat and milk products than people with low-fibre diets. People who eat lots of fibre also tend to enjoy a lifestyle with many other factors that may confer a lower risk of contracting colorectal cancer. If there is any accepted truism regarding diet, lifestyle and the risk of contacting colorectal cancer then it is no longer the view that eating lots of fibre has an inverse association. Today dietitians are likely to stress the factors that give rise to greater risk, and top of the list of factor will be the consumption of too much alcohol.

Q21 The author would agree that there is no adverse association between colorectal cancer and a diet rich in fibre.

True False Cannot tell

Answer

Q22 A diet of cereals, vegetables and fruit does protect against diseases such as heart disease.

True False Cannot tell

Answer

Q23 It is not coincidental that people who eat a diet rich in fibre such as whole grains, fruit and vegetables are less likely to get colorectal cancer than people with a diet poor in fibre.

True False Cannot tell

Answer

Q24 When cancer of the colon occurs, a family history of the disease may be found.

True False Cannot tell

Answer

Q25 The author would agree that an inverse association exists between eating lots of fibre and rates of colon cancer.

True False Cannot tell

Answer

Passage 6

Nuclear power generation is being reconsidered because so many industrialized countries are failing to reduce the level of their carbon omissions through energy efficiencies or renewable power. Some

advisers therefore feel that the industrialized world has no alternative but to return to nuclear power, at least until renewable alternatives become available. Nuclear power, which can generate electricity without emitting CO₂, is seen as a necessary evil that can help governments meet future and seemingly ever-increasing demand for more power without increasing the level of carbon omissions.

Proposals to look to nuclear power as a means to address global warming have not been welcomed by all environmental scientists and campaigners. Many argue that nuclear power is far from clean and at some stages of its life-cycle, for example when the uranium is mined and refined, is not carbon free. They raise the well-known objections to nuclear power of waste storage, the risk of radioactive leaks, the threat of terrorism, the cost of decommissioning and the risk of the spread of nuclear weapons.

Q26 The statement that nuclear power is far from clean and at some stages of its life-cycle, for example when the uranium is mined and refined, is not carbon free is made in support of the main theme of the passage.

True False Cannot tell

Answer

Q27 If viable renewable sources of energy were available now, then the case made in the passage for nuclear would be greatly weakened.

True False Cannot tell

Answer

Q28 The claims that nuclear power can generate electricity without emitting CO₂ and that nuclear power is far from clean at some stages of its life-cycle are contradictory.

True False Cannot tell

Answer

Q29 The long-term answer to global warming lies not in nuclear but in greater efforts and investment in renewable wind, wave and tidal power sources and in more energy efficiency.

True

False

Cannot tell

Answer

Q30 It is stated in the passage that nuclear power can help to reduce greenhouse emissions.

True

False

Cannot tell

Answer

End of test

Interpretation of your score

A score of 23 or higher

This is the only score that you should be content with if you face a verbal test and are applying for a graduate position on sought-after graduate management programmes or traineeships. From my experience, a score over 23 should see you through to the next stage in the recruitment process, but this will vary from campaign to campaign and, like most things, is not a certainty.

A score between 16 and 22

This is a very wide category of score and will include the near-miss candidate as well as someone who did only moderately well. So, decide where you believe you are on this scale and set about a systematic programme of practice in order to improve your score. Be prepared to undertake a lot of practice if your score was at the lower end of the scale.

A score below 15

Employers are increasingly looking for all-round candidates and will be looking for candidates who realize well-balanced scores across all the tests. Reflect on the reason for your score. Did you spend too long on questions and so run out of time before you could attempt sufficient questions? Do you need to improve your accuracy when working quickly under the pressure of an exam? Once you have settled on the cause, set about a programme of revision under realistic practice conditions. Above all else, do not give up. Keep working and you will witness a marked improvement in your performance in these very common tests.

Answers and many explanations

Chapter 2

Practice at 40 more personality questionnaire statements

S1 Explanation: Perhaps we all do let small things upset us more than they should, but not usually in work, and remember that this is the context of these questions, so you should almost certainly have disagreed with this statement; S2 Explanation: Every employer will have some regulations and procedures and it will be reasonable to expect you to follow them. Employers therefore will most likely expect agreement with this statement; S3 Explanation: This is a statement with which you should not agree as it implies that you will not work as soon as your boss turns their back. S4 Explanation: Agreement implies a reactive approach and risks an employer concluding that you see little merit in a proactive style of working where you might for example attempt to design and deploy strategies in anticipation of likely events; S5 Explanation: You almost certainly should agree if you want to work in a fast-moving, competitive environment; S6 Explanation: Agreement with this statement would risk the interpretation that you were not a strong team player; S7 Explanation: Agreement would suggest a considerate, conscientious employee; S8 Explanation: Your approach to the management of others is under investigation here and agreement may suggest a lack of trust in the work of others; S9 Explanation: Admitting to the possibility of not being able to cope is not a vote of confidence in yourself. Employers are looking for the candidate who rolls up his or her sleeves and helps clear up the mess when lots of things go wrong. They really do not want the added problem of staff declaring that they cannot

cope; **S10** Explanation: Most employers would want you to agree with this statement as it shows sensitivity to the fact that colleagues might be offended by what was intended to be a humorous remark; **S11** Explanation: To agree most certainly suggests that you plan to prevail in everything you do. But it might be hard to place such a person in most working teams; **S12** Explanation: You might feel confident when you undertake familiar tasks but should not admit to feeling bored; **S13** Explanation: Agreement may be taken as a proactive, strategic approach or it might be looked at as risk-averse, which may or may not be a good thing; **S14** Explanation: Few employers would expect staff to adopt this stance and would prefer employees to treat customers and colleagues with tolerance irrespective of whether or not they were polite or considerate; **S15** Explanation: Your approach to people, relationships and effective communication is under examination here. In a customer-focused role it is likely that the employer would prefer agreement with this statement. To neither agree nor disagree might be appropriate in the case of a role in, for example, finance or banking when an auditable trail of compliance is required; **S16** Explanation: Whether or not you are happier in a team, few employers would be looking for an employee who admitted to not being able to rely on their own initiative; **S17** Explanation: Agreement suggests that you understand that the demands of your job and social life must be balanced. Disagreement risks the interpretation that you value your social life above your career; **S18** Explanation: Some employers are looking for candidates who are comfortable with, for example, the highly regulated culture in which they operate and they are seeking neither change nor innovation; others have a role in mind that demands a new outlook. How you answer this question will depend on the role for which you are applying; **S19** Explanation: Remember that these questions are not about your personal life, only your working life, and you should have no difficulty talking openly about your feelings relating to work; **S20** Explanation: It's good to express confidence in your own abilities and to portray yourself as someone who knows your own mind but be careful that you do not overdo this to the point of appearing arrogant or opinionated; **S21** Explanation: Where it is applicable, success may well require such a knowledge, but some organizations operate in a market in which success relies more on, for example, creativity, efficiency or relationships. Be sure to identify the secret of the success of the organization to which you are applying and use the findings of this research to shape your response to its questionnaire; **S22** Explanation: If it affects your ability to complete your work, then what you do in your own time may concern your employer. In some positions and for reasons of health and safety, the use of intoxicating substances the effect of which will still be felt at work could be taken as a breach of contract and grounds for disciplinary action; **S23** Explanation: Agreement risks the interpretation that you may be prone to paranoia!; **S24** Explanation: Your answers will depend on

whether you want to work in a backroom role or a customer-facing role. Make sure your preference corresponds with the position for which you are applying; S25 Explanation: You have to agree with a statement such as this or risk being identified as a non-team player, even a bit of a loner. Even agreement might risk the impression that you are less than proactive, and slow to take the initiative. But you just have to run that risk and agree; S26 Explanation: Clever it may be, but few employers would find them appropriate; S27 Explanation: Here once again your answer should depend on the company to which you are applying. Whether or not it is an advertising agency, if it serves multinationals then you should disagree. If it is a company that provides services to celebrities, then by all means agree; S28 Explanation: Most employers would want their employees to disagree with this statement and approach every task with the same degree of care and attention; S29 Explanation: You will not want to give the impression of being resistant to change, so it is wise to tread carefully. In many large and fast-developing organizations new initiatives abound; S30 Explanation: Work is so different from our private life. This might be true in your private life but at work we all act differently. If you disclosed to a prospective employer that you might struggle to start conversations with colleagues or customers whom you did not know, then they would be likely to have reservations about your suitability for employment; S31 Explanation: A no-blame culture is operated by some companies, so agree at your peril if you are completing the questionnaire as a part of your application to such a company; S32 Explanation: A candidate for a professional position might well disagree with this. If candidates for other roles disagree, they might risk the impression of not being good team players; S33 Explanation: Few employers would agree as the statement suggests that good manners should not always be displayed when at work; S34 Explanation: Agreement suggests a very hands-on approach, except that it might be questioned, why ask to be copied into something you rarely have time to read? Agreement therefore risks the impression that you have difficulty trusting colleagues; S35 Explanation: Competence would be expected in a professional role; in other roles it might be taken as lacking ambition. Decisiveness may well be desired by an organization with a relatively unstructured culture, but it might not appeal to more hierarchical organizations; S36 Explanation: Agreement may risk the impression that you lack sensitivity to the needs of colleagues but it will also stress a willingness to take risks and perhaps an entrepreneurial style; S37 Explanation: Statements such as this are investigating your motivational approach. Many employers will assess staff against indicators that they may consider demanding and may be discouraged by a candidate who disagrees with this statement; S38 Explanation: Disagreement might be expected from an all-rounder; agreement might be expected from a candidate applying for a role that demands focus, for example consultancy, or a candidate who prefers a focused style of working;

S39 Explanation: Agreeing will not score many points for ambition. The person who agrees is unlikely to be successful in an application for a graduate or managerial traineeship; S40 Explanation: Agreement might well suit a results-orientated role and a company seeking a results-focused candidate, but make sure you are applying to an organization seeking such a person.

Attitudinal questionnaires to which there is most definitely a wrong answer

S1 Answer: Disagree. Explanation: Staff should be willing to help protect the property of their employer and doing so may in fact be an implicit condition of your contract of employment; S2 Answer: Agree. Explanation: It would be unreasonable for an employer to expect you not to make any mistakes. Most would want you to inform your manager as soon as was practical and help put the consequences right; S3 Answer: Disagree. Explanation: Be careful of negatives; it should be obvious to everyone these days that bad language is not appropriate in the workplace; S4 Answer: Disagree. Explanation: Agreement with this statement would suggest you hold prejudices, ie preconceived opinions not based on experience or reason; S5 Answer: Agree. Explanation: You may enjoy fiery relationships in your private life but there is no place for them at work, and blowing your top is not acceptable behaviour in any workplace; S6 Answer: Agree or disagree. Explanation: If it is not a condition of your employment, then it is your own decision as to whether or not you might agree to such a request; S7 Answer: Disagree. Explanation: A colleague who is off sick deserves support. The question of whether one has too great a workload should be treated as a separate matter and raised with one's line manager; S8 Answer: Disagree. Explanation: Equality of opportunity is a matter taken very seriously by the vast majority of employers and it has a direct bearing on every job; S9 Answer: Agree. Explanation: Being able to follow instructions in no way implies a lack of leadership. Every position in the world of work involves instruction from somewhere, be it shareholders to the CEO downwards. How could any employer employ someone who could not be comfortable when given instructions; S10 Answer: Disagree. Explanation: Debate and discussion is an essential part of the process used in most places of work to arrive at good policy decisions. Inevitably this process involves differences of opinion, which need to be worked through in a responsible, professional manner.

Chapter 3

A key skills diagnostic exercise

1. Answer 80,000; 2. Answer 391 miles; 3. Answer \$123.30; 4. Answer 2,925; 5. Answer 49,699; 6. Answer 43 units; 7. Answer 2,380; 8. Answer \$16.48; 9. Answer 3,600; 10. Answer 37; 11. Answer 235; 12. Answer 10 pence; 13. Answer $1\frac{1}{36}$; 14. Answer $\frac{1}{7}$; 15. Answer 1,610; 16. Answer 5.66; 17. Answer 0.0625; 18. Answer 17.871; 19. Answer 7:2; 20. Answer 500; 21. Answer 60 centilitres; 22. Answer 12.25; 23. Answer £14.25; 24. Answer 84; 25. Answer 215; 26. Answer £27.75; 27. Answer £4,255.32; 28. Answer $x = 1,800/3 + 1,000$; 29. Answer 60%; 30. Answer 6. Explanation: Simply multiply the sum of $x + y$ by 2 to find the answer ($2 \times 3 = 6$). You do not need to establish the values of x and y to answer the question; 31. Answer $a = b$. Explanation: Zero multiplied by anything = 0, so $6b = \text{zero}$, therefore b must be zero. This in turn means that a must also be zero, so $a = b$; 32. Answer 12. Explanation: Subtracting equation 1 from equation 2 gives $-a + b = 6$, or $b - a = 6$. Multiplying this by 2 gives $2b - 2a = 12$; 33. Answer 14; 34. Answer 576

Sixty practice number problems

1. Answer 125; 2. Answer 48; 3. Answer 1,600 gallons; 4. Answer £268.80; 5. Answer \$35.74; 6. Answer 105,000; 7. Answer 5 mph; 8. Answer £60,800; 9. Answer $1/20$ kilogram; 10. Answer 120; 11. Answer \$450; 12. Answer £198,000; 13. Answer \$16.80; 14. Answer \$4.50 15. Answer £2; 16. Answer 62%; 17. Answer 1:49; 18. Answer 16%; 19. Answer \$315.25; 20. Answer 28 pence; 21. Answer \$42.50; 22. Answer 18 inches; 23. Answer £13,382.26; 24. Answer \$200; 25. Answer £165.31; 26. Answer 60%; 27. Answer \$350; 28. Answer £10.58; 29. Answer \$350; 30. Answer £85.11; 31. Answer \$84; 32. Answer £680.85; 33. Answer \$30:\$20; 34. Answer A = 100, B = 500, C = 400; 35. Answer 3:10; 36. Answer 15:6:4; 37. Answer 240; 38. Answer £2,448; 39. Answer £37.38; 40. Answer £2,400; 41. Answer 28 mph; 42. Answer $3\frac{1}{2}$ hours; 43. Answer 30 minutes; 44. Answer £80.19; 45. Answer 20 minutes; 46. Answer £22,368; 47. Answer 6,667 votes; 48. Answer 23; 49. Answer 1; 50. Answer \$15,063.15; 51. Answer 14; 52. Answer 528; 53. Answer 504; 54. Answer 2; 55. Answer 1,500; 56. Answer 5; 57. Answer 128; 58. Answer 131; 59. Answer 243; 60. Answer 216

Numerical test 1: Practice intermediate-level number problem test

1. Answer C; 2. Answer E; 3. Answer A; 4. Answer E; 5. Answer D; 6. Answer B; 7. Answer E; 8. Answer A; 9. Answer F; 10. Answer D; 11. Answer C; 12. Answer D; 13. Answer B; 14. Answer C; 15. Answer D; 16. Answer E; 17. Answer A; 18. Answer C; 19. Answer B; 20. Answer F; 21. Answer C; 22. Answer F; 23. Answer A; 24. Answer A, 2 hours. Explanation: The two people can fill the truck twice in 8 hours, so they will take 4 hours to fill it and 2 hours to half-fill it; 25. Answer 7 and 21. Explanation: The first number = $3 \times$ the second, so first number = $3x$ and $3x + x = 28$, so $4x = 28$, $x = 7$; the numbers are 7 and (3×7) 21; 26. Answer 600. Explanation: 492 gallons represents 82% of the original amount of fuel. You must find 100%; $1\% = 492 \div 82 = 6$, so $100\% = 600$; 27. Answer 667. Explanation: Find the average to calculate the sum. There are $40 - 18 + 1$ numbers in the range (you have to add the 1, otherwise you are a number short) = 23 numbers; the average is $18 + 40 = 58 \div 2 = 29$; the sum = $29 \times 23 = 667$; 28. Answer 38, 39, 40. Explanation: Make x the first number; $x + (x + 1) + (x + 2) = 117$, so $3x + 3 = 117$, so $3x = 114$, $114 \div 3 = x$, $x = 38$, therefore the numbers are 38, 39, 40; 29. Answer 24 minutes. Explanation: $28 = 6x$ walking + $1x$ cycling; $28 \div 7 = 4$, $1 \times 4 = 4$ minutes cycling, 24 minutes walking; 30. Answer 33. Explanation: $99 - 67 + 1$ (we add the 1, otherwise we fail to count 67) = 33

Numerical test 2: Practice intermediate-level sequencing test

1. Answer 59; 2. Answer 12; 3. Answer 44; 4. Answer 99; 5. Answer 40; 6. Answer 92; 7. Answer 62; 8. Answer 09; 9. Answer 08; 10. Answer 10; 11. Answer 12; 12. Answer 08; 13. Answer 19; 14. Answer 14; 15. Answer 11; 16. Answer 50; 17. Answer 20; 18. Answer 40; 19. Answer 60; 20. Answer 06; 21. Answer 10; 22. Answer 10; Explanation: The sequence is 2, 4, 6, 8, 10 but the 4 and 8 have been presented in a misleading way; 23. Answer 31; 24. Answer 81; 25. Answer 24 to give 244. Explanation: To find the sequence you have to go through two steps. First, work out the increase between the numbers, ie $10 - 4 = 6$, $28 - 10 = 18$, $82 - 28 = 54$. Now take this new sequence, 6, 18, 54; here each new number is three times the previous number and extending the series we get 6, 18, 54, 162, 486. The number XX4 can now be found, as $XX4 - 82 = 162$, ie $XX4 = 162 + 82 = 244$. Or $730 - XX4 = 486$, ie $XX4 = 730 - 486 = 244$; 26. Answer 53. Explanation: Again, to find the sequence you have to go through two steps. First, add together the grouped

numbers $1 + 1 = 2$, $1 + 2 = 3$, etc, which gives the series 2, 3, 5, 7. This is a sequence of prime numbers, which can be extended to give 2, 3, 5, 7, 11, 13, and then working backwards gives the answer.

Numerical test 3: Intermediate data interpretation practice test

Q1 Answer 7; Q2 Answer A; Q3 Answer B; Q4 Answer 1; Q5 Answer C; Q6 Answer A; Q7 Answer B; Q8 Answer 3; Q9 Answer B; Q10 Answer A; Q11 Answer D; Q12 Answer 3; Q13 Answer A; Q14 Answer C; Q15 Answer B; Q16 Answer 2; Q17 Answer C; Q18 Answer A; Q19 Answer C; Q20 Answer 1; Q21 Answer B and C; Q22 Answer A, B and D; Q23 Answer C; Q24 Answer B and D; Q25 Answer A and B; Q26 Answer A, C and E; Q27 Answer B; Q28 Answer B, D and F; Q29 Answer E; Q30 Answer A, C and E

Numerical test 4: Practice intermediate-level data interpretation test

1. Answer 1; 2. Answer 3; 3. Answer 4; 4. Answer 3; 5. Answer 1; 6. Answer 4; 7. Answer 3; 8. Answer 2; 9. Answer 3; 10. Answer 4; 11. Answer 1; 12. Answer 1; 13. Answer 3; 14. Answer 1; 15. Answer 4; 16. Answer 1; 17. Answer 3. Explanation: $72\% + 12\%$ (fire damage) = 84% , $100\% - 84\% = 16\%$ of claims are fraudulent; 16% of $2,500 = 400$; 18. Answer Cannot tell. Explanation: We know that 12% of all claims = ratio $3:25$ but we do not know the percentage of genuine claims and we are not provided with enough information to establish the number of genuine claims, so we cannot answer the question; 19. Answer 1. Explanation: Calculate 12% of $7,000 = 840$; $420,000 \div 840 = 500$; 20. Answer 4. Explanation: $20/100 \times 360 = 72$ degrees; 21. Answer y . Explanation: The horizontal axis is called the x axis and the vertical the y axis; 22. Answer 3. Explanation: The average wage increased 200 cents over the period illustrated and the trade value from manufacturing for export fell by $\$9$ bn over the same period. $9\text{bn} = 9,000$ million $\div 200 = 90 \div 2 = 45$ million per cent, loss; 23. Answer 4. Explanation: This information is not provided; 24. Answer 4. Explanation: $19 = 5\%$, $19 \div 5 = 3.8 \times 100 = 380$; 25. Answer 3. Explanation: $10\%_{50} = \frac{1}{5} \times 360 = 24$

Numerical test 5: Advanced data interpretation practice test

Q1 Answer 0.02. Explanation: $\text{aps} = \text{savings/income} = 8/400 = 0.02$;
 Q2 Answer 0.05. Explanation: Total both the saving and incomes for the three months and divide saving/income = $145/2900 = 0.05$;
 Q3 Answer \$20. Explanation: Calculate the aps for both the original level of income and the increased level = $0.05 \times 1,100 = 55$, $0.05 \times 1,500 = 75$. Subtract the original level from the increased level to establish how much more people would save: $55 - 75 = 20$;
 Q4 Answer Country 2. Explanation: Country 1 $\text{aps} = 35/700 = 0.05$, country 2 = $50/800 = 0.0625$, country 3 is given as 0.03;
 Q5 Answer True. Explanation: The new machine is twice as fast as the old, $50 \text{ minutes} \div 2 = 25$, $1,000,000 \div 25 = 40,000$;
 Q6 Answer False. Explanation: We are told that twenty-four billion pounds is invested in premium bonds and in the past 10 years the number of bonds in the draw has increased sevenfold, but $24 \div 7 \neq 4$;
 Q7 Answer Cannot tell. Explanation: A billion can be defined as either a thousand million or a million million. The first of these definitions is the more common, but strictly speaking you cannot tell, given the information contained in the passage;
 Q8 Answer 5. Explanation: It is clear from the opening balance that the company would require access to external cash for five out of the six months covered by the cash flow forecast;
 Q9 Answer 40%. Explanation: In \$000 sales, total 105 and direct costs 42. $42/105 = 0.4 \times 100 = 40$;
 Q10 Answer 3:7. Explanation: In total, \$18,000 is spent on net wages and \$42,000 on direct costs, so you must express 18:42, which reduces to 3:7;
 Q11 Answer \$2,200. Explanation: To find the opening balance, add the monthly + or - to the previous opening balance, = $1.6 + 0.6 = 2.2$ or \$2,200;
 Q12 Answer \$4,500. Explanation: First calculate the percentage of 3,000 (net wages) that NI and pensions represent. But notice that the figure of 2.7 NI/pensions related to three months' net wages, so calculate $2.7/9 = 0.3 \times 100 = 30\%$. Now calculate 30% of 24,000 ($3 \times 8,000$ monthly net wages) = 7,200 and finally subtract the original 2,700 to get \$4,500 a quarter;
 Q13 Answer False. Explanation: The passage states that the government wants 50% of people aged 18–30 to go to university, but not all of them will study for a foundation degree;
 Q14 Answer Cannot tell. Explanation: The passage provides no information about the motivational qualities of successful students on foundation degrees, beyond the statement that they are not for the faint-hearted;
 Q15 Answer Cannot tell. Explanation: The passage states that there are 20,000 people already doing foundation degrees and that half of all the courses available have 50 or more students enrolled, but from this we cannot calculate or infer that there are 200 courses with 50 or more students enrolled;
 Q16 Answer 250m. Explanation: Calculate 4% of 1,000 and add it to 12% of 1,750m = $40 + 210 = 250$ m;
 Q17 Answer False. Explanation: You are only given gross profit and not the cost of sales, so you cannot calculate the value of sales for 2005

or 2206; Q18 Answer 45m. Explanation: Calculate 57% of 1,000 = 570, 30% of 1,750 = 525, minus 525 from 570 = 45. Express your answer in millions; Q19 Answer E. Explanation: Gross profit means in this context the difference between revenue and the cost of goods sold. This definition is not given. A defines gross revenue, B would be an acceptable definition of net profit, C = gross profit margin, D = gross receipt; Q20 Answer 1:10. Explanation: You have previously calculated the two-year contribution of coal as 250m. Subtract this from the two-year gross profit total, 2,750 – 250 = 2,500. Now express 250 as a ratio to 2,500 in its simplest form = 1:10; Q21 Answer False. Explanation: Overall the chance is 1 in 4, but in an urban school the chances are greater. The gender of the child will also change the odds; Q22 Answer True. Explanation: The ratio for infections of girls and boys is not dependent on the type of school. There might be more infections found in the urban school but the ratio would remain 3:1; Q23 Answer False. Explanation: The passage states that lice cannot fly or jump and that infections are more common in girls because their play tends to involve close head contact. It cannot be inferred from these assertions, however, that lice crawl from one head to another, because infections might be transmitted in another way – for example, by the transfer of eggs and not adult lice.

Chapter 4

One hundred and thirty-five practice questions

1. Answer C; 2. Answer B; 3. Answer C; 4. Answer A; 5. Answer A;
6. Answer A; 7. Answer B; 8. Answer B; 9. Answer A; 10. Answer C;
11. Answer C; 12. Answer A; 13. Answer C; 14. Answer A;
15. Answer D; 16. Answer A; 17. Answer C; 18. Answer A; 19. Answer C;
20. Answer A; 21. Answer B; 22. Answer B and C; 23. Answer A;
24. Answer A and B; 25. Answer A. Explanation: Note that while '1960's' is often seen in print, this is not correct; 26. Answer D; 27. Answer B;
28. Answer D; 29. Answer C; 30. Answer C; 31. Answer C;
32. Answer A; 33. Answer B, F and G; 34. Answer A, C, D, E and F;
35. Answer A; 36. Answer B; 37. Answer A; 38. Answer C;
39. Answer A; 40. Answer B; 41. Answer B; 42. Answer C;
43. Answer C; 44. Answer C; 45. Answer Complimentary;
46. Answer Effect; 47. Answer Continual; 48. Answer Advice;
49. Answer All ready; 50. Answer Among; 51. Answer Into; 52. Answer No word required;
53. Answer Flaunt; 54. Answer Take; 55. Answer from; 56. Answer Fewer; 57. Answer Farther; 58. Answer I;
59. Answer Lying

Word link practice questions

64. Answer golf club; 65. Answer ship hospital; 66. Answer manage regulate; 67. Answer top bottom; 68. Answer king palace; 69. Answer construct retire; 70. Answer horse bench; 71. Answer agree dispute; 72. Answer emperor empire; 73. Answer horse hair; 74. Answer car petrol; 75. Answer light dark; 76. Answer anarchy order; 77. Answer red green; 78. Answer Asia Europe; 79. Answer competent defective; 80. Answer sketches appraises; 81. Answer west east; 82. Answer blockage conclusion; 83. Answer cloth leather; 84. Answer paper note; 85. Answer untimely disgraceful; 86. Answer metre foot; 87. Answer strong experienced; 88. Answer genial affable; 89. Answer work deviate; 90. Answer compliant defiant; 91. Answer mystic devotee; 92. Answer obfuscation encyclopedist; 93. Answer perfection gluttonous; 94. Answer behaviourism psychology; 95. Answer abundance profusion

Word swap

96. Answer securing aimed; 97. Answer line press; 98. Answer equal person; 99. Answer London association; 100. Answer grade range; 101. Answer kicking back; 102. Answer things naming; 103. Answer subject paragraph; 104. Answer sold made; 105. Answer private consultants; 106. Answer worried pledged; 107. Answer 30,000 50,000; 108. Answer impressive predictable; 109. Answer grandfather lord; 110. Answer ancient hard

Sentence sequencing questions

112. Answer 1, 3, 4, 2; 113. Answer 1, 3, 4, 2; 114. Answer 1, 4, 3, 2;
115. Answer 3, 1, 2, 4; 116. Answer 2, 1, 3, 4; 117. Answer 2, 4, 1, 3;
118. Answer 2, 4, 3, 1; 119. Answer 3, 2, 1, 4; 120. Answer 4, 1, 3, 2;
121. Answer 3, 2, 1, 4; 122. Answer 2, 4, 1, 3; 123. Answer 3, 1, 4, 2;
124. Answer 3, 2, 4, 1; 125. Answer 3, 2, 4, 1; 126. Answer 3, 2, 1, 4;
127. Answer 2, 4, 3, 1; 128. Answer 4, 2, 3, 1; 129. Answer 3, 1, 2, 4;
130. Answer 2, 4, 1, 3; 131. Answer 3, 2, 1, 4; 132. Answer 3, 2, 4, 1;
133. Answer 4, 1, 3, 2; 134. Answer 2, 1, 4, 3; 135. Answer 3, 4, 1, 2

Test 1: Practice test of English usage

1. Answer C; 2. Answer A; 3. Answer No error; 4. Answer A;
5. Answer A; 6. Answer D; 7. Answer D; 8. Answer B; 9. Answer C;
10. Answer D; 11. Answer A; 12. Answer B; 13. Answer B;
14. Answer D; 15. Answer A; 16. Answer C; 17. Answer C;

18. Answer A; 19. Answer A; 20. Answer D; 21. Answer B;
22. Answer A; 23. Answer D; 24. Answer D; 25. Answer A

Test 2: Practice intermediate-level critical reasoning test

1. Answer Not possible to say; 2. Answer False; 3. Answer False;
4. Answer Not possible to say; 5. Answer Not possible to say; 6. Answer
Not possible to say; 7. Answer True; 8. Answer False; 9. Answer True;
10. Answer False; 11. Answer True; 12. Answer True; 13. Answer Not
possible to say; 14. Answer False; 15. Answer Not possible to say;
16. Answer Not possible to say; 17. Answer False; 18. Answer True;
19. Answer Not possible to say; 20. Answer A incorrect B correct;
21. Answer A incorrect B incorrect; 22. Answer A correct B incorrect;
23. Answer A incorrect B correct; 24. Answer A correct B correct;
25. Answer A correct B correct; 26. Answer A incorrect B incorrect;
27. Answer A correct B correct; 28. Answer A correct B incorrect;
29. Answer A correct B correct

Test 3: Practice intermediate-level critical reasoning test

Q1 Answer True; Q2 Answer Cannot tell; Q3 Answer True;
Q4 Answer True; Q5 Answer Cannot tell; Q6 Answer Cannot tell;
Q7 Answer False; Q8 Answer True; Q9 Answer Cannot tell;
Q10 Answer Cannot tell; Q11 Answer True; Q12 Answer Cannot tell;
Q13 Answer True; Q14 Answer True; Q15 Answer False. Explanation:
Only 16 per cent did; Q16 Answer True; Q17 Answer True;
Q18 Answer Cannot tell; Q19 Answer True; Q20 Answer False;
Q21 Answer False; Q22 Answer False; Q23 Answer True; Q24 Answer
Cannot tell; Q25 Answer False. Explanation: 19 per cent raised the price;
Q26 Answer Cannot tell; Q27 Answer True; Q28 Answer False. Explan-
ation: The figures are unconnected, so it must be coincidence;
Q29 Answer Not enough information; Q30 Answer Action required;
Q31 Answer No action required; Q32 Answer No action required;
Q33 Answer No action required; Q34 Answer Not enough information;
Q35 Answer Not enough information; Q36 Answer No action required

Test 4: Practice advanced-level reading comprehension and critical reasoning test

Q1 Answer False. Explanation: The passage describes the design of the nose and wing as important in the best designs that achieve the longest flights; Q2 Answer Cannot tell. Explanation: the passage does not touch on the subject of a paper plane's performance outside; Q3 Answer True. Explanation: The term used in the passage is 'cambered', which means slightly arched or convex; Q4 Answer False. Explanation: The passage states that a paper plane should not be made with these features; it does not state that it is not possible to make such a plane. If one is made, it does not weaken the case made within the passage; Q5 Answer True. Explanation: A careful reading of the passage will confirm this; Q6 Answer Cannot tell. Explanation: The passage states that the scientists are drawn from nine countries across every populated continent but it does not say what sample they will use to undertake their study; Q7 Answer False. Explanation: Our genetic differences explain our propensity for particular diseases, not the extent to which we are genetically identical; Q8 Answer False. Explanation: This point is explicitly stated in the passage, so it is false to say that it can be inferred; Q9 Answer C; Q10 Answer C; Q11 Answer B; Q12 Answer B; Q13 Answer D; Q14 Answer C; Q15 Answer A; Q16 Answer D; Q17 Answer C; Q18 Answer C; Q19 Answer C; Q20 Answer B; Q21 Answer A; Q22 Answer B; Q23 Answer B

Test 5: Practice advanced-level reading comprehension and critical reasoning test

Q1 Answer False. Explanation: The passage does not state that people are switching from private cars to, for example, public transport, allowing you to infer that people will be switching to trains as one form of public transport; Q2 Answer Cannot tell. Explanation: It is true that the passage concludes that travellers face overcrowding, slower journey times and in some states closures, but the passage does not mention higher fares; Q3 Answer False. Explanation: The issue is the small amount of investment in both road and rail transport and is not limited only to the railway; Q4 Answer True. Explanation: A reading of the passage shows that the problems are already chronic in these areas and the problems are bottlenecks, congestion and overcrowding; Q5 Answer True. Explanation: You should not answer 'Cannot tell' here. The question is offering the statement that 'at home European travellers face a bleak future of overcrowding and congestion' as a summary of the passage's conclusion, and your task is to decide whether that is a valid summary or not (and it is); Q6 Answer True. Explanation: The main theme of the passage is the failure of bright children from low-income homes to

achieve the same grades as bright children from high-income families; Q7 Answer False. Explanation: The passage does cover the findings of the research but it does not comment on any debate that ensued; Q8 Answer True. Explanation: It is said in the first sentence that ‘recent research has provided further stark evidence of the educational apartheid...’; Q9 Answer False. Explanation: The passage reports in a journalistic manner; it is not an unreliable source so is not anecdotal, and it is written in the third person so cannot be described as dogmatic; Q10 Answer False. Explanation: This cannot be inferred because the passage provides no information on the role parental encouragement and home resources may or may not play in realizing potential; Q11 Answer Cannot tell. Explanation: The passage does not provide details of the observed squid, only that the species is believed to reach that length; Q12 Answer False. Explanation: It is stated in the passage that this is what the research reasoned, so it cannot be inferred from the passage; Q13 Answer True. Explanation: The approach made towards the bait by the squid was vigorous, as the squid is described as ‘shooting out’; Q14 Answer True. Explanation: The passage describes the filming as the first of the squid in its natural habitat and that it occurred at a depth of 1 kilometre; Q15 Answer Cannot tell. Explanation: The passage does not detail what sperm whales eat. It is stated that giant squid have been found in the stomach of whales, but which type of whale was not specified; Q16 Answer True. Explanation: This is clear from a reading of the passage; Q17 Answer True. Explanation: The passage does not state the objective for punishment but it states that the system is failing because of the high rate of reoffending after or even during punishment; Q18 Answer Cannot tell. Explanation: From the information given, we do not know why offenders are willing to risk being caught and punished again, and we cannot infer why. The reason may be, for example, that they are convinced they will not get caught, rather than a lack of fear of the consequences; Q19 Answer False. Explanation: The reason stated for abandoning these programmes is overcrowding and not that they are ineffective; Q20 Answer False. Explanation: It is not clear from a reading of the passage that we need to find alternative solutions; Q21 Answer True. Explanation: No adverse association means no harm, and the author would agree that a diet of fibre does not bring an increase in risk; Q22 Answer Cannot tell. Explanation: The passage provides no information on the relationship between a diet high in fibre and other diseases such as heart disease; Q23 Answer False. Explanation: It is stated in the passage that ‘it so happens that people with high-fibre diets eat less red meat and milk products than people with low-fibre diets. People who eat lots of fibre also tend to enjoy a lifestyle with many other factors that may confer a lower risk of contracting colorectal cancer’; Q24 Answer True. Explanation: It is stated in the passage that ‘a propensity for the disease is also known to be inherited’; Q25 Answer False. Explanation: In this case an inverse association means that as the

amount of fibre consumed increases, the occurrence of colon cancer should decrease, and the author would not agree that such an inverse association exists; **Q26** Answer False. Explanation: It is clear that the statement does not support the main theme of the passage, which is that a return to nuclear power is being considered because so many countries are failing to reduce their CO₂ emissions; **Q27** Answer True. Explanation: If renewable sources already existed, the case for a temporary return to nuclear power would be greatly weakened; **Q28** Answer False. Explanation: They are not contradictory, as the electricity generating stage of nuclear power's life may not be when it is far from clean; **Q29** Answer Cannot tell. Explanation: The passage makes the case that, in the longer term, alternatives hold the answer to global warming but it does not state which alternatives these might be. So, it is not possible to tell whether wind, wave and tidal power hold the answer; **Q30** Answer False. Explanation: This is not explicitly stated in the passage.