

- ✓ Are you worried about taking a test as part of a job selection process?
- ✓ Do you breeze through comprehension questions, but fall apart when faced with mathematical problems?
- ✓ Do reading and vocabulary questions make you panic?

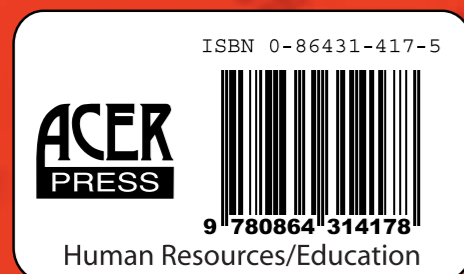
### Now you can be prepared!

PRACTISE NOW! is a practical guide to test questions written by people who write selection tests. This guide will give you confidence in answering test questions related to general ability, aptitude and skills.

Each chapter focuses on a specific question type commonly used in selection tests. Each question type is explained in detail and reasons given for the correct answer.

PRACTISE NOW! has plenty of sample questions for you to try, with hints to help you work through the answers.

Be prepared and confident with PRACTISE NOW!



PRACTISE NOW!

# PRACTISE NOW!

## How to prepare for recruitment and selection tests

- ✓ General ability
- ✓ Aptitude and skills

ACER

# Practise Now!

How to prepare for recruitment  
and selection tests

Australian Council for Educational Research



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## introduction

*Practise Now!* provides a time-effective method for honing your skills and familiarising yourself with different selection test questions. There are many kinds of selection tests from which your test may be chosen. *Practise Now!* is designed to help you to prepare for the most common kinds of questions that you may find in your selection test. It is not designed to help you prepare for any one specific test. It is designed to provide you with practical help when you are preparing to take a selection test and wishing to sharpen your test-taking skills, broaden your knowledge of selection tests and build up your confidence levels.

Each chapter of *Practise Now!* covers a different kind of question. Each chapter includes:

- a description of the kinds of questions you are asked
- sample questions that explain exactly how to find the answer
- different answer formats to reflect the range you may encounter
- additional sample questions so you can practise this knowledge.

Answers are provided for all questions. Although each explanation is one effective way to approach the question, it is not the only way. You may find that your own way of thinking about the question is more comfortable for you. Use the practice examples and their answers to help you develop your own method of figuring out the answers.

For more hints on how best to prepare for your test, read on ...

## test-taking tips

You do not need special knowledge to complete a selection test successfully. As you work through the chapters in *Practise Now!* you will be able to see where you need most practice. To improve your vocabulary and reading skills you can work on puzzles and crosswords, and check that you understand the answers. You can use a dictionary to look up unknown words you come across in books, magazines and newspapers. To improve your mathematical skills you can practise your times-tables and number facts. You can work on logic games and puzzles. It might be helpful if you spend time reviewing your school exercise books for English, Mathematics, Science and Technology.

Practising will also help to build your other test-taking skills. It will help you to:

- build a positive attitude
- be prepared
- use your time wisely
- apply your test-taking strategies
- apply the strategies for answering multiple-choice questions
- check your answers.

## BEFORE THE TEST

### Why practise?

The most effective way to prepare for a test is to become familiar with what you will be doing in an actual test. You will be more confident if you know in advance what type of questions to expect in the ‘real thing’. This book helps you recognise the kinds of questions you might be asked to answer. You will discover the things you are already good at, and the skills you need to develop further. Make use of the sample questions to pinpoint those question types that you need to practise.

### Build a positive attitude

Part of your preparation to take the test is to develop a confident attitude. Many of the questions are based on common sense knowledge. By completing the practice materials in this book, and by other preparation you may do, you are building your ‘can do’ attitude to test taking. Focus on what you **do** know, not what you don’t! You already have a great deal of knowledge to help you take the test.

Focus on **positive thoughts** about the test – not negative ones. Say to yourself: ‘Okay, this is **not** completely new to me – I’m familiar with questions like this. I’ll take the test one step at a time.’ You will give yourself the very best chance of doing well.

### Be prepared

There are two aspects to being prepared:

- 1 Find out in advance as much as possible about the test you are about to take.

For instance, you should know:

- how long the test takes
- the type and number of questions
- what equipment you are allowed to use during the test
- how to show your answers

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- what happens if you miss a question
- if marks are deducted for wrong answers
- how you will find out your results.

### 2 Make sure you know the practical details:

- Where do I go to take the test?
- What time will it start?
- What identification do I need?
- What do I need to take along on the day?
- Do I need to take a pen, pencil, eraser, calculator, dictionary?

## ON THE DAY OF THE TEST

### Use your time wisely

- **First**, take a moment to settle in and focus on the task ahead.
- **Listen** carefully to any instructions you are given by the test administrator.
- **Read** any written instructions carefully (any that appear on a whiteboard etc. and the ones at the front of the test paper).
- **Take note** of the starting and finishing time, and any particular times allowed for sections of the test (eg 'You have 20 minutes for Part A, and 35 minutes for Part B').

### Apply your test-taking strategies

- **Scan** through the whole test first, to **identify** the kinds and number of questions, and how to record your answers. Note that the questions are most probably multiple-choice questions, and you may have a separate answer sheet.
- As you work through the test, **read** each question **carefully**. For most of the questions there will be only one correct answer. Take care that you are sure how the question needs to be answered. Do not assume that all of the questions in the test should be answered in the same way.
- **Start from the beginning** and work through each question but do not spend too much time on any question you are finding too hard. If you decide to skip any questions, it might be a good idea to have a guess and mark your answers. If so, make sure you note them so you can return later to check and complete them.
- Some people prefer to work on the **easiest questions first** – but if you are skipping any questions, take care you mark all of your answers against the correct question number, especially if you are using a separate answer sheet.

- Make sure you do the maximum number of questions possible in the time, but remember that many tests have more questions than any person can finish in the time allowed.
- When you have answered the easiest questions, go back to the beginning and answer the rest of the questions.
- Keep track of the **time** – especially if there are several parts to the test.

### **Apply these strategies for answering multiple-choice questions**

Multiple-choice questions are the most common kinds of questions in selection tests. The question has an introductory part, followed by a set of four, five or six choices from which you must choose the correct answer. The set of answers is usually shown beside the letters A, B, C, D, E. You write these letters to show your choice, not the actual number or word.

- Always read the question carefully – don't rush.
- Underline key words:
  - watch for qualifying words like 'always', 'never', 'best', 'worst', 'always', 'all and every', 'none', 'only'
  - watch out for negatives such as 'not' or 'except' which can drastically change the meaning of the statement.
- Look for directions that say 'choose the most correct answer', 'mark the one best answer', 'mark all the correct answers' etc. and answer accordingly.
- Try to anticipate the answer before looking at the choices – try the 'cover-up strategy' – cover the alternatives with your hand.
- Always read all of the choices carefully and completely. There may be a better option further down the list.
- Eliminate answers you know are wrong straight away.
- If alternatives differ by only one or two words, try reading the question with one alternative, while covering up the others.
- If none of the alternatives seems close to a correct answer, re-read the question and try to work out what you have missed. There is always one correct choice.
- A useful strategy to assist with reading comprehension of mathematics questions is to underline key information. This can also reduce the need for multiple readings.
- It is important to check whether your answer is reasonable, or at least that it makes sense within the context of the problem. A running speed of 198 km/h, for example, is probably not correct.
- To avoid running out of time, it often pays to quickly develop a time guide at the start of a test.



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- If you can't work out the answer to a particular question, move on – another question later in the test might trigger your memory.
- Often, your first instinct about the right answer is correct, but if you are sure you have made a mistake when reviewing your work, change the answer and clearly show your new answer.

### **Check your answers**

Allow some time at the end of the test to review and check over your answers. At the end of selection tests it is worth taking a guess if you are not sure. Make sure you have answered **as many of the questions as possible**. Also make sure that your answers are clear and easy to read, and are all in the correct place.

# chapter one

## word knowledge

### What are word knowledge questions?

Word knowledge questions test your understanding of:

- vocabulary
- word meanings
- sentence comprehension
- synonyms
- antonyms
- proverbs.



### Question type 1: CHOOSE THE MISFITS

You will read a list of six words and the test is to find two of them that are not like the others. Read each word and think about what it means. Look for a common link that applies to only four of the words.

Take care that you think about different possible meanings as you read. Sometimes the link will be in word meanings, so you need to look for synonyms (words that have the same meaning) or antonyms (words that have the opposite meaning). In others the link will be based on a particular classification of things like kinds of animals or groups of jobs. Sometimes there might be a link that relates to three of the words but not to the others. You must find the link that applies to four of the words and leaves out only two of them.



example \_\_\_\_\_

**1.1 Four of the following are *alike* in some way.**

**Write the letters of the other two in the box.**

Four of these have something in common. You are looking for the two that are different.

- A torrent
- B deluge
- C flood
- D riot
- E chop
- F pelt

Read the instruction carefully. You are looking for two that do not fit.

Your answers are the two that do not belong with the others.

\_\_\_ and \_\_\_

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### How to find the answer

First think about what the words mean. Skim through the list to see if you can identify what kind of links the words have. Is it meaning, is it types of things or is it something else?

- In this case there are four words that can relate to fast-flowing water: *torrent*, *deluge*, *flood* and *pelt*.
- *Riot* and *chop* stand out from the other words as they do not relate to water.

Write the answer **D** and **E** in the box.

### ★ test yourself

Try these for yourself. The answers are on p. 74.

1.2 Four of the following are *alike* in some way.  
Write the letters of the other two in the box.

HINT  
Similar  
meaning

- A frank
- B sweet
- C stamp
- D candid
- E truthful
- F forthright

\_\_\_ and \_\_\_

1.3 Four of the following are *alike* in some way.  
Write the letters of the other two in the box.

HINT  
Types of things  
(groups or classification)

- A kangaroo
- B elephant
- C spider
- D whale
- E lizard
- F mouse

\_\_\_ and \_\_\_

**1.4 Four of the following are *alike* in some way.  
Write the letters of the other two in the box.**

A wind  
 B cloud  
 C island  
 D ocean  
 E valley  
 F mountain

\_\_\_ and \_\_\_

**Question type 2:  
FIND THE SYNONYM**

This type of question tests your knowledge of synonyms, that is, words that have the same meaning.

Think about the meaning of the word written in CAPITAL LETTERS in the question. If you know what the word means, it is much easier to work through each of the alternatives in the list until you find the one that is closest in meaning.

If you do not know the word at all, you should try guessing what it might mean: ‘What words do I know that are like that one? Where have I read this word or heard it used? What words in the list do I know that might give a clue about what the bold word means?’. Remember that one of the words is definitely right.

★ example \_\_\_\_\_

**2.1 Find the word that means *most nearly the same* as PALATIAL.**

Choose one word from this list that has the closest meaning to the top one.

[ A regal  
 B friendly  
 C smoky  
 D spacious  
 E palatable

You must find a word in the list that means the same as this one.

### How to find the answer

- First think about the meaning of *palatial*. It is a word that means ‘like a palace’, ‘having lots of space’.
- Then read each word in the list and think about the meaning.
- Cross off any of the words that you know could not be correct.
- Think about the words that are left. The two words that mean something like a palace are *regal* and *spacious*. *Regal* means ‘royal’ not ‘like a palace’. *Spacious* means ‘having lots of room’.

The answer is ***spacious*** so mark **D** on the answer sheet.

If you do not know the meaning of *palatial*, make a guess.

- First, ask, ‘Which one can I cross off?’. Remove any you know must be wrong.
- Then read the others and ask, ‘Which one looks as if it might have the same meaning?’.
- Take care that you are not drawn towards a word that could have a similar appearance. For example, *palatable* looks a bit like *palatial*, but it means ‘tasty’.
- *Friendly* and *smoky* relate to words that could be like *palatial* (*pal* and *pall*).
- You might guess that *palatial* means something royal like ‘regal’, but *palatial* does not mean ‘regal’.
- A palace is very big and has lots of space. *Space* is very like *spacious* so this is probably the answer.

The answer to guess is ***spacious*** so mark **D** on the answer sheet.

### ★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 74.

<b>2.2 Find the word that means <i>most nearly the same</i> as ASSENT.</b>	
A post B climb C raise D argue E agree	<input type="text"/>

2.3 Find the word that means *most nearly the same* as MANIPULATE.

- A introduce
- B obstruct
- C manage
- D control
- E write

2.4 Find the word that means *most nearly the same* as SYMPATHETIC.

- A common
- B compatible
- C compliant
- D comparable
- E compassionate

### Question type 3: FIND THE ANALOGIES

This type of question tests your ability to see ways that abstract ideas can be described in terms of concrete things.

The questions have an idea in CAPITAL LETTERS and a choice of five concrete things that can be compared with or that might illustrate the idea. To work out these questions you need to think about what the idea means and then use your imagination to work out how well each of the five choices best describes the idea.

★ example \_\_\_\_\_

**3.1 Which one would best suggest PERMANENCE?**

Choose one of these concrete things that illustrates the idea.

- A a world tour
- B a gentle wind
- C a mossy rock
- D a wagging tail
- E a flowing river

This word is the abstract idea.

**How to find the answer**

- First think about what the word *permanence* means. It mainly means the quality of lasting for a very long time, even lasting forever.
- Read the set of concrete things and imagine what they could suggest. Ask yourself, 'Does this thing last for a long time?'
- Cross off any of the things that definitely do not seem to be long-lasting. This will include things that change, move or die like a flowing river, the wind and a wagging tail.
- Read the others. Which seems to last longer, a world tour or a mossy rock? What seems to suggest something that is fixed and unchanging?

If you recognise the word, it makes it much easier to sort out the concrete things. If you do not recognise the word, read each of the concrete things in the list and think, 'One of these is definitely right'. Look for the idea in the concrete things and see if they jog your memory about what the bold word might mean.

The answer is *a mossy rock* because it has been in the same place for a long time. Mark your answer **C** on the answer sheet.

★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 74.

**3.2 Which one would best suggest ACHIEVEMENT?**

- A a television set
- B a gold medal
- C a driveway
- D a car race
- E a letter

**3.3 Which one would best suggest FLIMSINESS?**

- A dog's bone
- B tree branch
- C dinner plate
- D paper tissues
- E colouring book

**3.4 Which one of these would best suggest HAPPINESS?**

**HINT**

Create a picture in your mind.

- A dolphins leaping in blue water
- B cows in a brown paddock
- C grey clouds in the sky
- D black ribbon on hair
- E bronze eagle at the zoo



### Question type 4: FIND THE RELATIONSHIP

This type of question tests your ability to make connections between words. You are given two related words and one other word written in capital letters, followed by a list of words. The first two words are linked and the test is to combine the third word with one from the list to make another pair that has the same link as the first pair.

First find the likely link or relationship between the first pair of words. Then use that link to connect the third word to one in the list. The link could be based on knowing how things work, knowing grammatical relationships or directly on the meanings of the words. Sometimes the third word helps you find the right meaning of the first word in this context. If you can't find a matching word from the list, check to see if there could be another relationship.



example

4.1 CLIPPERS are to WIND as ROWBOATS are to

A float.  
B glass.  
C team.  
D sail.  
E oar.

These words are related to each other.

Mark the letter to show your answer.

Find which word in the list makes a pair with the same relationship.

(a) (b) (c) (d) (e)

### How to find the answer

- First work out the relationship between clippers and wind.
- There are several different meanings for clippers so it is important to see which of them might relate to wind. Clippers might mean a cutting tool like shears or a tool with a blade for cutting hair. It also means a class of sailing ship.
- There are also several different meanings for wind. If you look for a relationship between all of the meanings of clippers and all of the meanings of wind, you can make up a sentence that says *Clippers (sailing ships) are moved by wind.*
- Then you apply the same relationship to rowboats and the list of words, that is, you try each of the words in the list to finish the sentence *Rowboats are moved by ...*

The answer is **oar** so you should mark **E** on the answer sheet.

4.2 COMPLETION is to FINISH as COURAGEOUS is to

- A happy.
- B brave.
- C wise.
- D over.
- E end.

(a) (b) (c) (d) (e)

### How to find the answer

- In this example, the link between the first pair is one of meaning: *finish* is a synonym for *completion*. It means the same thing.
- You need to look for one of the words in the list that means the same as *courageous*. The answer is *brave* so you should mark **B** on the answer sheet.

4.3 INFERIOR is to INFERIORITY as STABLE is to

- A kennel.
- B steadily.
- C stabbing.
- D stability.
- E reliability.

(a) (b) (c) (d) (e)

### How to find the answer

- In this question, the link between the first pair is that *inferior* is an adjective and *inferiORITY* is the noun that is related to it.
- You need to find the word in the list that is the noun form of the adjective *stable*.
- Note that *stable* might mean ‘steady’ or ‘reliable’, but that is a different link based on meaning not on grammar.

The best answer is *stability* so you should mark **D** on the answer sheet.

★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 74.

4.4 UNDERNEATH is to BELOW as SIGNIFICANT is to

HINT

Same meaning/  
synonym

- A trivial.
- B beneath.
- C beautiful.
- D important.
- E trustworthy.

(a) (b) (c) (d) (e)

4.5 BEAUTIFUL is to UGLY as STRONG is to

HINT

Opposite meaning/  
antonym

- A feeble.
- B enclose.
- C brighten.
- D diminish.
- E colourless.

(a) (b) (c) (d) (e)

4.6 AUSTRALIA is to COUNTRY as CANBERRA is to

- A parliament.
- B territory.
- C nation.
- D place.
- E city.

(a) (b) (c) (d) (e)

4.7 **KITTEN** is to **LION** as **DUCKLING** is to

- A calf.
- B duck.
- C tiger.
- D eagle.
- E feather.

(a) (b) (c) (d) (e)

4.8 **COMPULSORY** is to **SLAVE** as **VOLUNTARY** is to

- A free.
- B cruel.
- C helper.
- D sentry.
- E prisoner.

(a) (b) (c) (d) (e)

4.9 **TEACHER** is to **EXAMINATION** as **COACH** is to

- A school.
- B training.
- C practice.
- D inspection.
- E competition.

(a) (b) (c) (d) (e)

### Question type 5: FIND THE PAIR RELATIONSHIP

This type of question tests your understanding about the relationships between pairs of words.

You will see a pair of words that are related to each other and below them a list of four pairs of words. You must select a pair from the list that best reflects a relationship similar to the bold pair of words. The pair of words might be synonyms (words with the same meanings) or they might be antonyms (words with the opposite meanings). Sometimes there might be other kinds of differences.

Work out what the relationship is in the pair of bold words and then read the other pairs to find the one pair that has the same relationship.

If the words in the pair are opposites, look for a pair of opposites in the list. If the words in the pair are of different status, look for a pair with different status.



example

Select the pair that best reflects a relationship similar to that between the pair of words in bold.

5.1	<b>remote</b>	<b>distant</b>
A	drive	lever
B	eliminate	remove
C	forget	remember
D	overcoat	dress

Find the pair with the same relationship.

This pair of words has a relationship.

#### How to find the answer

- Read the bold pair of words. What is the relationship between the words *remote* and *distant*? They both mean the same thing – far away. They are synonyms.
- Read each of the set of pairs in the list and ask, ‘Are these two words synonyms, do they mean the same thing?’
- *Drive* and *lever* are different classes of things and so are *overcoat* and *dress*. *Forget* and *remember* are opposites.

- The pair of words that mean the same thing is *eliminate* and *remove*.  
The answer is B so mark **B** on the answer sheet.

★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 74.

Select the pair that best reflects a relationship similar to that between the pair of words in bold.

5.2	<b>special</b>	<b>unusual</b>
A	cheap	costly
B	first	second
C	chain	series
D	motion	movie
<input type="text"/>		

**HINT**  
Look for synonyms.

5.3	<b>motionless</b>	<b>still</b>
A	soundproof	quiet
B	frozen	slushy
C	rapid	static
D	sour	tart
<input type="text"/>		

5.4	spectator	participant
A	onlooker	player
B	audience	applause
C	nocturnal	hunter
D	eyesight	vision

**Question type 6:  
PROVE THE SENTENCE**

This type of question tests your ability to think logically.

Each question has a summary sentence followed by five statements. The summary sentence should be taken as true and the test is to find the two sentences that prove the summary sentence.

All of the statements are related to the summary sentence but only two of them together give all the evidence needed to **prove** it. No single statement will give you all of the information you need, so you need to read each one and think about how the statement might give you part of the information.



example

**6.1 Two of the following statements together prove that JAMES WENT SURFING AT THE WEEKEND.**

SUMMARY SENTENCE:  
Should be taken as true.

These two statements are:

- A Surfing is James’s favourite sport.
- B James’s friends go surfing every Saturday.
- C The waves were very good at the weekend.
- D James plays football with his friends on Sunday.
- E James joins his friends every time they go surfing.

FIVE STATEMENTS:  
Find the two of them  
that prove the sentence.

Mark your  
answers  
clearly.

## How to find the answer

First read the summary sentence and think about what it tells you. Then read each statement and think about how it relates to the summary sentence. Next look back over the statements to sort out the most likely ones. You might need to use trial and error to see different combinations. As you read, ask yourself, ‘Does this combine with one of the others to prove the summary sentence?’.

What do the statements tell you?

- Statement A tells us why James is likely to go surfing but not why or whether he went surfing at the weekend.
- Statement B focuses on James’s friends, but Saturday does relate to the weekend.
- Statement C tells us about the waves at the weekend. It does not say anything about James but it might connect with another one about waves and James.
- Statement D appears irrelevant, but it does refer to one of the days of the weekend.
- Although statement E does not tell us specifically about what James did at the weekend, it does tell us something about when James goes surfing.

Ask yourself which ones link up with one of the others. What statements seem to be about the same thing? Cross off the least likely statements and think carefully about the others.

Go through the set and pair various statements until you come up with the two that prove the summary sentence. Be careful you don’t take into account information from a third statement. The two you choose must stand alone.

B and E combined give you all the information you need. B tells you that James’ friends go surfing every Saturday. E tells you that James joins his friends every time they go surfing.

Therefore, James surfs every Saturday, which proves James surfed at the weekend.



test yourself \_\_\_\_\_

Try these for yourself. Note that some of the Summary Sentences in these kinds of questions have slightly different wording. The answers are on p. 74.



**6.2 Two of the following statements together prove that SALLY IS BRIAN'S SISTER.**

**HINT**

Try drawing a family tree.

- A Sally and Brian live in the same house.
- B Brian has a sister.
- C George is Brian's father.
- D Sally's mother has a son.
- E Sally is George's daughter.

These statements are \_\_\_ and \_\_\_

**6.3 Which TWO of the following statements together prove that I TRAVEL ON A WHITE BUS?**

- A My local bus company runs black and white buses every day.
- B Black buses always leave on the hour and white buses on the half hour.
- C The first black bus leaves exactly at 5.00am each day.
- D My bus leaves at 10.30am exactly.
- E Every bus runs strictly on time.

\_\_\_ and \_\_\_

**6.4 Which TWO of the following statements prove that HELEN ATE CEREAL LAST NIGHT?**

- A Helen ate pears with her cereal yesterday.
- B Helen eats cereal every day with milk.
- C Helen doesn't always eat fruit.
- D Helen only eats fruit at night.
- E Helen likes eating pears.

\_\_\_ and \_\_\_

**6.5 Two of the following statements together prove that PETER THE POODLE HAS BEEN FIGHTING.**

**HINT**

Be aware of different answer formats.

- A Bert the Beagle and Peter the Poodle often go to the vet together.
- B Peter only goes to the vet when he has been in a fight.
- C Peter only ever fights with Bert the Beagle.
- D Peter was treated at the vet on Wednesday.
- E Bert was in a fight on Thursday.

These statements are \_\_\_ and \_\_\_

**Question type 7:  
PROVERBS**

This type of question tests your knowledge of proverbs. A proverb is a short saying that embodies a familiar truth or useful advice, which has been popular for a long time.

You are given a proverb followed by four sayings that are possible interpretations of the proverb. The test is to find which saying means the same thing as the proverb. As you read the proverb, think about the message about life it is trying to give. Think about this meaning as you read each saying in the list to find the one that is closest in meaning.

★ example \_\_\_\_\_

*Which alternative has a similar meaning to this proverb?*

**7.1 Don't judge a book by its cover.**

Find which one of these sayings has nearly the same meaning as the proverb.

- A Prediction is a wise precaution.
- B Book illustrators don't read books.
- C Appearances are often misleading.
- D Choose carefully or waste your time.

This is a proverb. It is a saying that gives advice about life.

Write your answer.

### How to find the answer

The advice about life in this proverb is that you should not depend only on outside appearances as the reason for your opinion.

Read each of the sayings in the list and see which one most closely matches the idea that you can't use appearances to predict what someone or something will really be like.

- Saying A is not the same idea. This saying says it is wise to make predictions.
- Saying B might be a true statement but it has nothing to do with the proverb's advice about life.
- Saying C says that outside appearances can trick you, so this looks very like the meaning of the proverb. Keep this one in mind as you check saying D.
- Saying D might give some good advice about choosing and saving time but it is not about outside appearances.
- You have made sure that you have checked all of the sayings so now you can choose your answer.

The answer is C and you should mark C on your answer sheet.



### test yourself

Try these for yourself. The answers are on p. 74.

*Which alternative has a similar meaning to this proverb?*

#### 7.2 Least said, soonest mended.

- A Don't speak to strangers.
- B Stop the babble of fools.
- C Constant talk is annoying.
- D Too much talk is harmful.

**7.3 Act in haste, repent at leisure.**

- A If you rush in, you may regret it.
- B Sorrow comes from lazy actions.
- C Quick decisions are good decisions.
- D If you take your time, you will have time to rest.

**7.4 Still waters run deep.**

- A Keep the rivers flowing.
- B Do not dive into deep water.
- C Think before you act.
- D Don't assume quiet people are boring.

## chapter two

# reading comprehension

### What are reading comprehension passages?

Reading comprehension passages test your general reading ability. The passage could be a piece of written information, a chart, a table or a graphic, with a set of questions about the material. Usually there are between four and six questions for each passage and you must choose the one correct answer for each of them.

You must read the passage carefully and you may return to it as many times as you like after you read the questions. Sometimes it is useful to read the passage and the associated questions, and then re-read the passage with the questions in mind.

If you cannot see that any of the answers are correct, go back and carefully re-read the question and the passage. Remember that one answer is definitely correct. There is more advice about working on this kind of test in the section on Test-taking tips on p. 2.

Try reading the following passage and answering the questions about it. Then read the explanation that follows.



### **SAMPLE READING COMPREHENSION TEST**

The passage that follows is an extract of Principles of Correct Manual Handling from *Occupational Health and Safety (Manual Handling) Regulations 1988*.

This passage contains all of the information you need to answer the questions.

### Principles of correct manual handling

For purposes of job design, training and education programs, the following principles apply for most handling techniques:

- 1 Plan**  
 The person undertaking the manual handling should assess the load and determine how it will be handled and where it will be placed as one way of avoiding overexertion injuries. By assessing the situation first one can decide if a handling aid, a transporter, or another person is needed to move the object, animal or person.
- 2 Determine the best technique**  
 All factors should be taken into account when determining the best technique. A person undertaking a lift should lift efficiently and rhythmically, avoiding bending of the lower back. The best handling technique involves suitable balance and avoidance of unnecessary bending, twisting and reaching.
- 3 Take a secure grip on the object being handled**  
 The grip helps to determine how safe the task will be. Wherever possible, a comfortable power grip (with the whole hand) should be used rather than a pinch grip (with fingers only). Pull the load in close to the body. For lifting in particular, it is important to have the centre of gravity of the load close to the body to prevent excessive stress on the back and to make the strongest muscles of the arms available to hold the load. It is important to minimise the effects of acceleration by lifting slowly, smoothly and without jerking.
- 4 Vary handling tasks with lighter work**  
 The job/task should be designed so as to provide alternative tasks that do not heavily stress the same muscles. Lighter tasks allow the active muscles to recover and should be alternated with heavier handling tasks throughout the shift.
- 5 Team lifting**  
 To enable load sharing, lifting partners should be of similar height and build and should be trained together. There should be a person nominated as team leader to co-ordinate the lift.

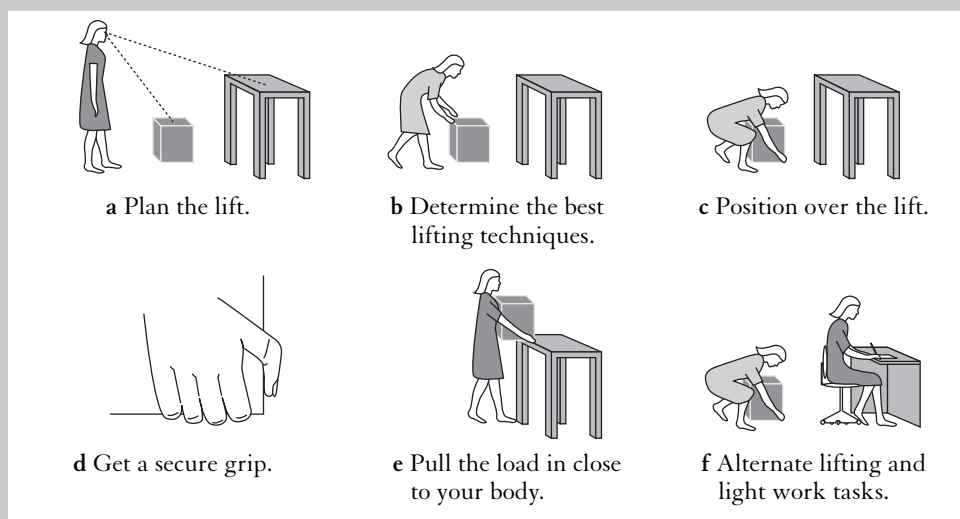


Figure 1 Handling techniques

Source: Department of Labour 1988, *Occupational Health and Safety (manual handling) Regulations 1988*, Melbourne.



example

Choose one of the endings to complete the sentence beginning to make a correct statement about the information in the passage.

**1.1 The main purpose of this information is to**

- A persuade workers to avoid jobs that require lifting.
- B describe ways to deal with workplace injuries.
- C persuade workers to use handling aids.
- D show workers how to minimise injury.

This is the sentence beginning that needs to be finished. Read it carefully.

**1.2 In Figure 1, the illustration (a) relates to the importance of**

- A carefully lining up the objects to be moved.
- B protecting one's eyes in the workplace.
- C analysing the nature of the lift.
- D ensuring the bench is clear.

**1.3 In Figure 1, in performing the part of the handling action between illustration (d) and illustration (e), the worker is advised to**

- A assess if assistance is required.
- B avoid straining the lower back.
- C undertake a lighter task.
- D nominate a team leader.

**1.4 Why is it recommended that the load should be pulled close to the body during the lift?**

- A to enable a power grip to be used
- B to slow down the lift so it doesn't jerk
- C to locate the centre of gravity outside the body
- D to use the strongest arm muscles to do the work

**1.5 In general, workers will be able to maintain safe handling techniques by**

- A making diagrams of the work area.
- B clearing dangerous goods from the work area.
- C moving the object, animal or person to a safer position.
- D planning for straight, smooth and stress-free movement.

**1.6 Alternate heavy and light work tasks are recommended because**

- A it is more interesting to change jobs if possible.
- B working muscles require time to rest and recover.
- C active people have stronger muscles to do heavier work.
- D every worker has many different jobs to finish each day.

**How to find the answer**

First carefully read the passage, the labels and the illustrations to make sure you understand what they are about. You might skim through the questions and re-read parts of the passage as well.

**Question 1.1**

Questions about the purpose of the passage ask you to think about the passage as a whole and why it was written. If there is a diagram, you need to think about how the passage and the diagram relate to each other.

- Read answer A and ask, 'Is this the purpose of the information?' The passage and the diagram are concerned with safe handling, not avoiding handling altogether.
- Read answer B. Does the passage have anything to do with dealing with injury? Not really, because it is about avoiding injury. Although you may deal with injury by avoiding it, answer B does not seem like the correct answer.
- Read answer C. The main purpose of the passage is not about using handling aids, although the passage does suggest that it is sometimes appropriate to do so.
- Read answer D. The passage does set out a process and the diagram shows this process as well. Is it about minimising injury? Does this seem better than answer B? Yes, because it is a much more accurate description. The answer is D so mark **D** on the answer sheet.

**Questions 1.2 and 1.3.**

Questions about the illustrations, diagrams or figures (graphics) are sometimes answered using the overall meaning, and they are sometimes answered by identifying something specific. Sometimes the answer is found by combining the written information and the graphic information.

- These questions ask about a specific part of the diagram, Figure 1. In Question 1.2 you need to look carefully at *illustration (a)* and then read the set of choices.



- Use the written passage to help you work out what the diagram is saying. The dotted lines might mean that objects need to be lined up but this is not confirmed by the label *Plan the lift*. When you check in the passage it says to *assess the load*.
- Read through the choices to find the one that is about assessing or analysing and planning the lift. The correct choice is **C**.
- In Question 1.3 you need to look at *illustrations (d) and (e)*, and work out what advice the worker is given. When you read the parts of the passage related to these illustrations, you will find there are several pieces of information.
- Read the choices until you find the one that most closely matches the meaning of the passage.
- The answer concerns not stressing the lower back. This is very close to straining so you should mark **B** as your answer.

#### Questions 1.4, 1.5 and 1.6

This kind of question is answered by finding the relevant parts of the written passage. These questions sometimes look as if there is more than one good answer. Sometimes they have a choice that looks sensible and might be true, but is not in the passage. You need to think carefully as you read each choice.

- In Question 1.4, it is important to keep the main part of the sentence in mind as you read the answer choices. The reason for pulling the load closer is not to make the lift smooth, although that advice is given in the passage. The passage says the reason is to use the strongest arm muscles. You should choose answer **D**.
- The correct answer for Question 1.5 comes from knowing that the whole passage and diagram tell you to use straight, smooth, stress-free movements for handling. You should choose answer **D**.
- For Question 1.6, all of the choices could be true but the passage says to rest active muscles, so the correct answer is **B**.

#### ★ test yourself \_\_\_\_\_

Try the following practice passages for yourself. The answers are on p. 74.

The passage below comes from a booklet titled *Code of Practice: Provision of Occupational Health and Safety Information in Languages Other Than English*.

### **Forms of communication**

Employers use a variety of methods to communicate with employees. Employers may for example: get something printed; use an existing publication; photocopy something; put up a notice; distribute a hand out; call a meeting; pass on messages through supervisors and others; make an announcement over a loudspeaker; run a training course; meet with employee representatives; or go through a committee.

The most appropriate way to provide information will vary with factors such as the nature of the hazard or level of risk, the type of information, the range of languages involved, the number of people to be informed, language competence and literacy. The employer should determine the most appropriate method in consultation with health and safety representatives.

### **Prefer oral communication and demonstration**

Oral communication, practical demonstrations and graphics are very effective methods of communicating. Use of audio and audiovisual material in appropriate languages is strongly encouraged.

### **Written communication and literacy**

Written material alone is not a very reliable method of communication. Apart from the possibility that some employees may not be literate, people often put the paper aside to read later and never get back to it. People who speak English quite well may not be able to read it as well. Written information is often expressed in more complex language. When people are given written information there is often no opportunity to ask questions or check what it means.

Written information is best used as a backup to more direct methods.

When organising language profiles and translations, it should be remembered that some people are not literate in their own language, and some are literate in a language other than the one they prefer to speak.

### **Check for understanding**

It is important to check that information has been understood. This can be done by asking the employee to repeat a demonstration, to identify the equipment used, or to explain the meaning of safety signs. Questions should be phrased so that more than a yes/no answer is required.

Source: Occupational Health and Safety Authority 1992, *Code of Practice for the Provision of Occupational Health and Safety Information in Languages Other Than English*, Melbourne.

**2.1 What is the main message in this passage?**

- A Employees should deal quickly with written communications and not put them aside to read later.
- B Employers should not use written communication because most employees cannot read English.
- C Employers have a responsibility to ensure employees understand information provided in the workplace.
- D Employees have a responsibility to learn to read and understand workplace communications in the English language.

**2.2 When planning to communicate with employees, the employer is advised to**

- A use as many different printed, audio-visual, graphic and word-of-mouth methods as possible.
- B design an appropriate communication method depending on the reason for providing the information.
- C translate all information into the preferred or most commonly used language in the workplace.
- D delegate the responsibility for communication of workplace information to the health and safety representative.

**2.3 The passage describes written communication to employees in the workplace as**

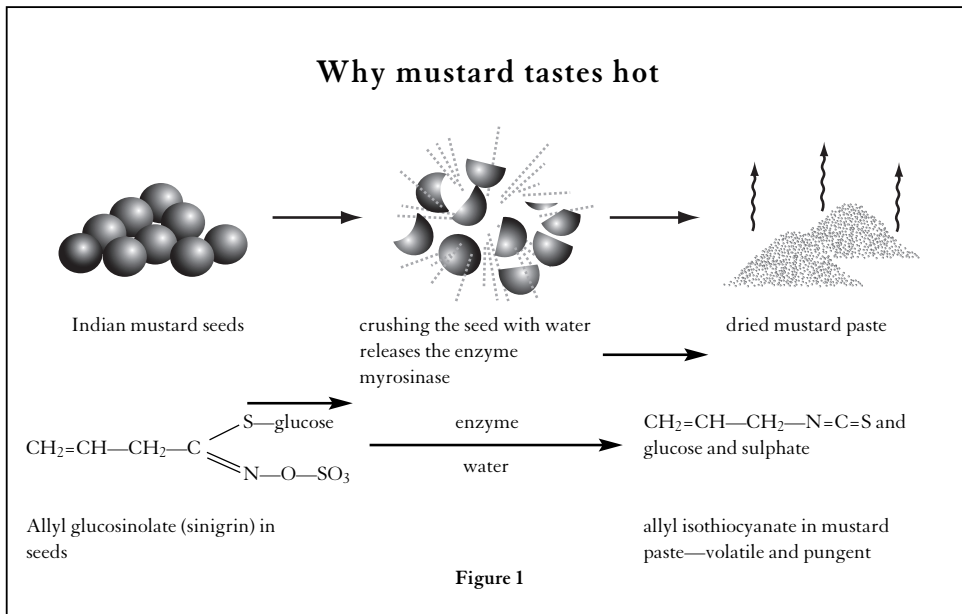
- A an ineffective way of communicating that should not be used.
- B the most effective way of sharing information with large groups of employees.
- C the most effective way to check that information has been understood.
- D a useful back-up to more effective ways of communicating such as oral and audio-visual demonstrations.

**2.4 After new workplace information has been provided, the employer should**

- A ensure all employees understand the information.
- B organise demonstrations and explanations.
- C follow up with new safety signs.
- D make an instructional video.

The passage below comes from an article titled 'Indian mustard – a hot prospect'.

Figure 1 accompanied a magazine article explaining the pungent (hot, spicy) effect of Indian mustard on nose and palate. The enzyme referred to is a substance that controls chemical reactions.



Source: 'Indian Mustard – a hot prospect'. Reproduced from Rural Research no. 146 (Autumn 1990) with permission of CSIRO.

**3.1 The enzyme that is present in whole mustard seeds is**

- A glucose and sulphate.
- B allyl isothiocyanate.
- C myrosinase.
- D sinigrin.

**3.2 The process described in Figure 1**

- A depends on the production of heat.
- B is based on the action of an enzyme.
- C requires the addition of enzymes to crushed seeds.
- D results from the application of pressure to enzymes.

**3.3 Figure 1 indicates that uncrushed mustard seed**

- A is pungent.
- B contains allyl isothiocyanate.
- C contains myrosinase and sinigrin.
- D contains no enzymes.

**3.4 Of the following, the best explanation for the pungency of Indian mustard paste is that crushing the seed**

- A brings myrosinase, sinigrin and water together to produce the pungent substance allyl isothiocyanate.
- B breaks down allyl glucosinolate into the pungent substance allyl isothiocyanate, with the release of water.
- C causes enzyme myrosinase to turn into the pungent substance allyl isothiocyanate.
- D causes enzyme myrosinase to produce sinigrin, which then turns into the pungent substance allyl isothiocyanate.

# chapterthree

## mathematical problems

What are mathematical problems?

Mathematical problems test your knowledge of basic mathematics (for example arithmetic) and your ability to solve real-world numerical problems.



### Question type 1: SIMPLE ARITHMETIC

This type of question tests your ability to do arithmetic. You are given a calculation and a set of answers to choose from.



example

<p><b>1.1</b>    <math>78 + 59 =</math></p>	<p>Check the calculation you need to do.</p>	<p>You have five choices for the answer. Only one is correct.</p>
<p>A 137            B 136            C 127            D 126            E none of these</p>		


### How to find the answer

#### HINT

Choose option E only if you have carefully checked that each one of A, B, C and D gives the wrong answer.

- These questions require a simple calculation. Look carefully at the process that is asked for. Does the question ask you to add, subtract, multiply or divide?
- You do not have to do the calculation in your head. Write the problem down if you wish.
- In this example,  $78 + 59 = 137$ , so **A** is the correct answer.
- You usually record your answer to this type of question on a special machine-readable answer sheet. See Appendix 2, p. 78.

You can also expect to find questions that involve fractions, percentages, square roots and algebra. You may need to revise your skills with these before taking a test of this kind.

 test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 75.

 HINT

Fractions are part of whole numbers eg:  $\frac{1}{2}$  is a half  
 $\frac{1}{4}$  is a quarter.  
 Fractions can also be written in decimal form  
 eg:  $\frac{1}{2}$  is the same as 0.5  
 $\frac{1}{4}$  is the same as 0.25

 HINT

To multiply two fractions, multiply the two top numbers and the bottom two numbers eg:  
 $\frac{1}{2} \times \frac{3}{4} = \frac{3}{8}$ .  
 To find the decimal equivalent, divide the top by the bottom  
 eg:  $3 \div 8 = 0.375$

 HINT

10% is the same as  $\frac{10}{100}$   
 25% is the same as  $\frac{25}{100}$

 HINT

$\sqrt{16} = 4$   
 (because  $4 \times 4 = 16$ )  
 $\sqrt{25} = 5$   
 (because  $5 \times 5 = 25$ )  
 $\sqrt{0.16} = 0.4$   
 (because  $0.4 \times 0.4 = 0.16$ )

1.2  $104 - 48 =$   
 A 56      B 64      C 66      D 126      E none of these

1.3  $\frac{3}{4} \times \frac{1}{2} =$   
 A 0.25      B 0.375      C 0.5      D 0.75      E none of these

1.4  $\frac{1}{2} \times \frac{3}{5} =$   
 A 0.1      B 0.3      C 0.5      D 0.325      E none of these

1.5 10% of 20% of 800  
 A 4      B 8      C 12      D 16      E none of these

1.6 10% of 10% of 200  
 A 20      B 10      C 5      D 200      E none of these

1.7  $\sqrt{0.64}$   
 A 0.32      B 0.8      C 3.2      D 8      E none of these

1.8  $\sqrt{0.25}$   
 A 0.5      B 0.125      C 2.25      D 7      E none of these

**HINT**

In algebra, letters (often  $x$ ,  $y$ , or  $z$ ) are used instead of numbers eg:  $2x = 10$  is the same as saying 2 times  $x$  equals 10. In this case  $x$  must equal 5.

**1.9** If  $24 = 48x$  then  $x =$

A 0.5      B 2      C -24      D 24      E none of these

**1.10** If  $6 = 2x$  then  $x =$

A 12      B 3      C 0.2      D 24      E none of these

**1.11** If  $\frac{2.4}{x} = \frac{2}{3}$  then  $x =$

A 2.4      B 2.6      C 3.4      D 3.6      E none of these

**Question type 2:**  
**WORD PROBLEMS**

These questions test your ability to solve mathematical problems that are written in words. You are given a description of a context that contains all of the information you need. To work out the answer read the description carefully to identify the important information and work out what calculations you need to make. Do the calculations and then consider each of the choices. Think carefully to decide if the answer you have found is reasonable, then go back, re-read and re-calculate if necessary.

★ example \_\_\_\_\_

**2.1** Grant competed in a 400 m swimming race. He swam the first 100 m lap in 55 secs. Each of the three remaining laps took him two seconds longer than the previous lap to swim. How long did Grant take altogether?

A 2 min 26 sec  
B 2 min 32 sec  
C 3 min 46 sec  
D 3 min 52 sec  
E none of these

Read the context carefully and underline key information.

Calculate and then choose one from this set of five choices.

Watch out for units and conversion errors.



**How to find the answer**

- Read the problem carefully and underline the important parts:

*Grant competed in a 400 m swimming race. He swam the first 100 m lap in 55 secs.*

*Each of the three remaining laps took him two seconds longer than the previous lap to swim.*

*How long did Grant take altogether?*

In this case the word 'previous' is critical.

- Often a diagram, list, table or graph of some sort (that makes sense to you) is useful to summarise the problem and develop a solution. For example:

**HINT**

Calculate using

1 minute = 60 seconds.

A common error is to use

1 minute = 100 seconds.

Lap 1 55s

Lap 2 57s (2 seconds slower than the previous lap)

Lap 3 59s (2 seconds slower than the previous lap)

Lap 4 61s (2 seconds slower than the previous lap)

Total 232s

Or you might just write  $55 + 57 + 59 + 61 = 232$ .

232 seconds is 3 min 52 secs.

The correct answer is **D**.



## test yourself

Try these for yourself. The answers are on p. 75.

2.2 80 mL of paint is required to cover an area of one square metre. How many litres of paint are needed to cover an area of 20 square metres?

A 0.4 L    B 1.6 L    C 4 L    D 16 L    E none of these

2.3 300 mL of coffee is required to fill a coffee mug. How many litres of coffee are needed to fill 12 coffee mugs?

A 6.0 L    B 0.6 L    C 3.6 L    D 36 L    E none of these.

2.4 A shoe shop advertises 20% off the total purchase price if you buy two pairs of shoes. Which one of the following statements is true?

**HINT**

Try the calculations with a simple value for each pair of shoes, eg: \$100.

- A This is equivalent to receiving a discount of 40% off each pair of shoes.
- B This is equivalent to receiving a discount of 20% off each pair of shoes.
- C This is equivalent to receiving a discount of 10% off each pair of shoes.
- D It is not possible to tell.
- E None of these

2.5 A fast food restaurant offers 50% off the price of your second burger of the same kind. Which one of the following statements are true?

- A This is equivalent to receiving a discount of 50% off the total cost.
- B This is equivalent to receiving a discount of 25% off the total cost.
- C This is equivalent to receiving a discount of 100% off the total cost.
- D It is not possible to tell.
- E None of these.

**HINT**

Try using real numbers (like 100) instead of the letters.

2.6 If a number  $a$  is 10% of another number  $b$ , then what percentage is  $a$  of  $2b$ ?

- A 5%   B 10%   C 20%   D 50%   E 200%

2.7 If a number  $x$  is 20% of another number  $y$ , then what percentage is  $x$  of  $2y$ ?

- A 5%   B 10%   C 20%   D 50%   E 200%

### Question type 3: PROBLEMS PRESENTED IN A UNIT

Problems presented in a unit commonly contain three to five questions about the information. It is often necessary to keep re-reading the information because it may be used in more than one question. The information often has a real-life context, but it is not always the case.



example

Ray is going to hire a car. He has the choice of Plan A or Plan B.

Plan A is a 'flat rate' plan. The cost is \$75 per day, no matter how many kilometres are travelled.

For Plan B, the cost depends on the number of kilometres travelled.

The base charge is \$65 per day. This allows you to travel an average of 200 km per day during the hire period. If you average more than 200 km per day, there is an additional charge of 25 cents/km for each extra kilometre above 200 km that you travel.

You are given a real-life context that is the basis for all of the questions in the unit.

Read carefully and underline key information.

Each question relates to the context and has five choices.

- 3.1** For Plan B, how much will Ray have to pay if he travels a total of 500 km over four days?  
A \$260    B \$300    C \$335    D \$385    E none of these
- 3.2** How many kilometres will Ray need to travel in four days if Plan A is to cost the same as Plan B?  
A 360 km    B 800 km    C 840 km    D 960 km    E none of these
- 3.3** Ray hires a car for  $n$  days under Plan A. What is the total cost in dollars?  
A  $75^n$     B  $75n$     C  $75 + n$     D  $n^{75}$     E none of these

**How to find the answers**

- Read the passage carefully, underlining key information. In this case the information underlined could be:

*Ray is going to hire a car. He has the choice of Plan A or Plan B.*

*Plan A is a 'flat rate' plan. The cost is \$75 per day, no matter how many kilometres are travelled.*

*For Plan B, the cost depends on the number of kilometres travelled. The base charge is \$65 per day. This allows you to travel an average of 200 km per day during the hire period. If you average more than 200 km per day, there is an additional charge of 25 cents/km for each extra kilometre above 200 km that you travel.*

- Also look for key information in the wording of the question.

**3.1** For Plan B, how much will Ray have to pay if he travels a total of 500 km over four days?

- A \$260    B \$300    C \$335    D \$385    E none of these

Because the hire period is 4 days, up to 800 km of travel would be included in the hire fee because of the phrase 'average of 200 km per day'. This means that for the 500 km journey there will be no extra travel charge. The cost will be:

$4 \times \$65 = \$260$  or A.

So mark **A** on your answer sheet.

**3.2** How many kilometres will Ray need to travel in four days if Plan A is to cost the same as Plan B?

- A 360 km    B 800 km    C 840 km    D 960 km    E none of these

- Although usually slower, it is possible with this multiple-choice question to work backwards to find the correct answer.

	Plan A	Plan B
360 km over 4 days	$4 \times \$75 = \$300$	$4 \times \$65 = \$260$ (No travel charge. Dist < 800 km)
800 km over 4 days	\$300	\$260
840 km over 4 days	\$300	\$270 (Extra 40 km at 25c/km = \$10)
960 km over 4 days	\$300	\$300 (Extra 160 km at 25c/km = \$40)

This shows that **D** is the correct response.

- A quicker method would be to realise that the difference in the daily charges over 4 days is \$40 ( $\$10 \times 4$ ) and at 25c/km this would require 160 km ( $40 \div 0.25$ ) of travel above 800 km (giving a total travel distance of 960 km) to make the costs equal.

3.3 Ray hires a car for  $n$  days under Plan A. What is the total cost in dollars?

- A  $75^n$     B  $75n$     C  $75 + n$     D  $n^{75}$     E none of these

**HINT**

In algebra, multiplication symbols are left out, so  $75n$  is the same as  $75 \times n$ . Replacing the letter with real values can help you see patterns and find solutions.

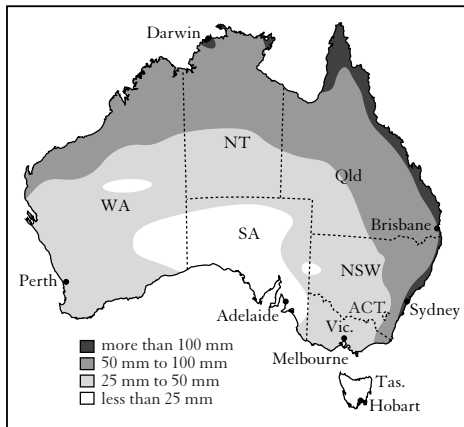
- Because the cost is \$75 *per day* then two days would cost  $\$75 \times 2$ , 12 days would cost  $\$75 \times 12$ , etc, and so the rule  $\$75 \times n$  for  $n$  days, or simply  $75n$ , (answer **B**), is correct.

★ test yourself \_\_\_\_\_

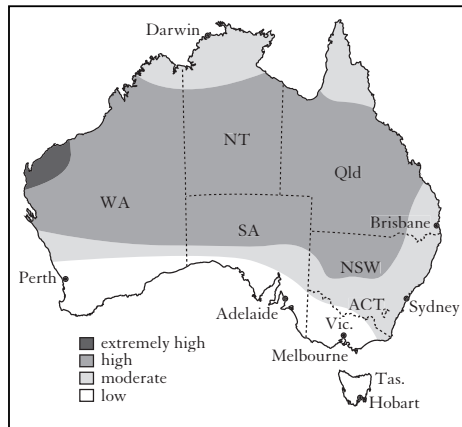
Now try the following real-life context problems for yourself. The answers are on p. 75.

**Unit 1 – Rainfall**

Figure 1 indicates rainfall intensity, which is the maximum rainfall that can be expected in a place in any 24-hour period. Figure 2 indicates rainfall variability, which is a measure of how the total annual rainfall may vary from year to year.



**Figure 1**



**Figure 2**

- 3.4 Compared with Sydney, Melbourne has a
- A lower rainfall intensity and a lower rainfall variability.
  - B lower rainfall intensity and a higher rainfall variability.
  - C higher rainfall intensity and a lower rainfall variability.
  - D higher rainfall intensity and a higher rainfall variability.

cont...

- 3.5 Which one of the following statements is most consistent with the figures?
- A Places with the highest intensity have extremely high variability.
  - B Places with the highest intensity have low variability.
  - C Places with the lowest intensity have low variability.
  - D There is little relationship between intensity and variability.

### Unit 2 – Dinner Dance

All the employees who work for a company are invited to the annual dinner dance. Each employee who attends is allowed to bring one partner. However, not all the employees attend the dance and, of those who do attend, some do not bring a partner.

- The number of employees of the company may vary from year to year.
- Only employees of the company and their partners attend the dinner dance.

- 3.6 In one year, there were 56 employees of the company. That year, eight employees attended the dinner dance without a partner and 44 brought a partner.

The total number of people at the dinner dance was

- A 88 .                      C 100 .
- B 96 .                      D 104 .

- 3.7 In one year, there were 60 employees of the company. That year, 10 of the employees did not attend the dinner dance. The total number of people at the dinner dance was 80.

The number of employees who brought a partner was

- A 25 .                      C 35 .
- B 30 .                      D 40 .

*cont...*

- 3.8 In one year, there were 84 employees of the company. The total number of people at the dinner dance was 90 of whom 35 were employees who had brought a partner.

This year, the number of employees who did not attend the dinner dance was

- A 55 .                      C 29 .  
B 35 .                      D 20 .

- 3.9 One year, the number of employees of the company who attended the dinner dance with a partner was the same as the number who attended without a partner but more than the number who did not attend.

It follows that the total number of people who attended the dinner dance was

- A less than the number of employees of the company.  
B the same as the number of employees of the company.  
C greater than the number of employees of the company.  
D any of A or B or C depending on the number of employees of the company.

**HINT**

Try using numbers to check your answer.

### Unit 3 – Stream Speed

A device used for measuring the speed of flow of a stream consists of a metre ruler with a piece of wood secured to it at right angles. Hammered through the wood, at exactly 5 cm on each side of the mid-line of the ruler, are two nails. The points of the nails are down and are level with the upper surface of the ruler (Figure 1).

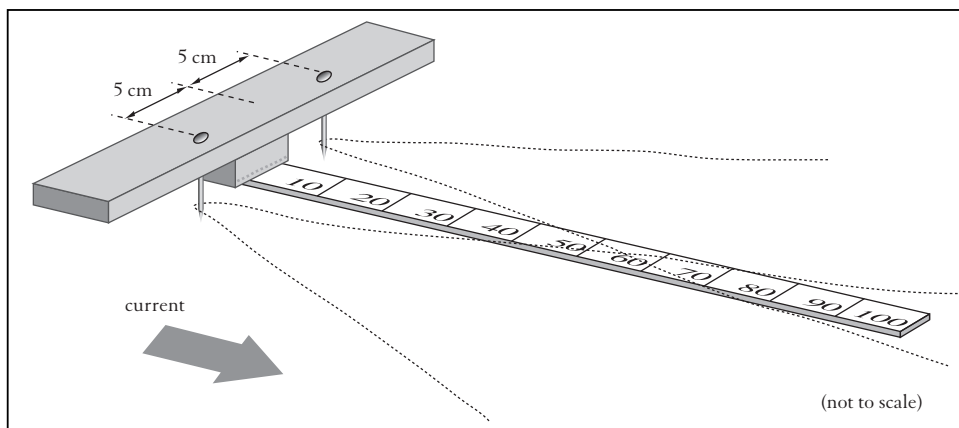


Figure 1

In use, the device is placed partly submerged in the stream, with the nails at the upstream end, so that the tips of the nails, and the surface of the ruler, are just below the water's surface. 'V'-shaped ripple patterns are set up that cross the ruler, as shown in Figure 1.

The distance from the ruler's 'zero' to the point where the patterns cross the ruler is noted, and the formula

$$s = 0.1555 d, \text{ where } d = \text{distance along metre ruler in cm to where} \\ \text{the patterns cross it; and} \\ s = \text{speed in cm per second}$$

is used to find the stream's speed. In Figure 1, the patterns cross near the 55 cm point.

*cont...*



- 3.10** If the point where the patterns cross is as shown in Figure 1, the stream's speed would be closest to  
A 2.8 m/sec      C 28 cm/sec  
B 8.5 cm/sec      D 85 cm/sec
- 3.11** Which one of the following best estimates the fastest stream speed that this apparatus is designed to measure?  
A 15 cm/sec      C 1.5 m/sec  
B 1 m/sec      D 15 m/sec
- 3.12** Of the following, the best estimate of the value of  $d$  for a stream flowing at 10 cm/sec is  
A 1.5 cm.      C 15 cm.  
B 6.4 cm.      D 64 cm.

#### Unit 4 – Fertiliser

A farmer has a 20 hectare corn crop. The difference in growth for the corn is due to the applications of different types of fertiliser. The farmer found that HiGrow Organic fertiliser gave best results. HiGrow Organic fertiliser was labelled as 24-6-6 which meant that it contained 24% nitrogen, 6% phosphorus and 6% potassium.

- 3.13** This means that the amount of potassium in a 24 kg bag of HiGrow Organic fertiliser would be  
A 0.4 kg  
B 1.44 kg  
C 4 kg  
D 6 kg  
E 14.4 kg
- 3.14** It takes the farmer 5 hours to load and spread 30 tonne of fertiliser by tractor. If the fertiliser was applied at the rate of 15 tonne per hectare, how long would it have taken the farmer to deliver fertiliser to his corn plot.

- 3.15** This year the corn crop yielded 5 tonne per hectare. The farmer spent \$2000 per hectare preparing, fertilising, planting and harvesting. He received \$240 per tonne when the corn was sold. How much was the farmer's profit or loss this year from the crop?

**HINT**

First calculate the farmer's revenue per hectare.

- A \$16 000 profit
- B \$16 000 loss
- C \$35 200 profit
- D \$35 200 loss
- E none of these

**Unit 5 – Scuba Diving**

The time ( $T$  minutes) that divers can stay underwater can be estimated by the rule  $T = \frac{120V}{d}$  where  $V$  is the volume of air in cubic metres before compression and  $d$  is the depth in metres.

- 3.16** You wish to dive at a depth of five metres. The length of time you could stay under the water if the volume of air is 0.8 cubic metres before compression is
- A 10 minutes.
  - B 19 minutes.
  - C 120 minutes.
  - D 12.5 hours.

- 3.17** In order to stay under water at a depth of 10 metres for one hour, the volume of air before compression would need to be approximately

---

- 3.18** If there are 2 cubic metres of air before compression available and you wish to dive for 30 minutes, what depth is possible?

---

# chapterfour

# number sequences and patterns

What are number sequences and patterns?

These questions test your ability to analyse number sequences and patterns to find rules and relationships, and then apply these rules and relationships to identify missing numbers.



## Question type 1: NUMBER SEQUENCES

This type of question tests your ability to find patterns in a number sequence. You then need to find missing numbers that fit the patterns. The following examples show the most common types of number sequences.

### Constant differences



example

**1.1** Find the missing number in the following sequence.

5    8    11    ?    17    20

Check the differences between the numbers.

This is an example of the simplest kind of number sequence where the difference between each number is a constant. In this case, there is a constant difference of 3 between the numbers in the sequence, so the missing number is 14.

### Constant differences, combined sequences



example

**1.2** Find the two missing numbers in the following sequence.

20   3   18   6   ?   9   14   ?

Sometimes *two* sequences are involved.

This example is a variation of the previous kind whereby two number sequences are combined. To make this clearer, the two sequences are shown below, one in bold and the other in italics.

$$20 \quad 3 \quad 18 \quad 6 \quad ? \quad 9 \quad 14 \quad ?$$

Each term of the sequence in bold is decreasing by 2, so the missing number is 16.

$$20 - 2 = 18 \quad 18 - 2 = ? \quad ? - 2 = 14$$

$$20 \quad 3 \quad 18 \quad 6 \quad ? \quad 9 \quad 14 \quad ?$$

$$? = 16$$

Each term of the sequence in italics is increasing by 3, so the missing number is 12.

$$3 + 3 = 6 \quad 6 + ? = 9 \quad 9 + 3 = ?$$

$$20 \quad 3 \quad 18 \quad 6 \quad ? \quad 9 \quad 14 \quad ?$$

$$? = 12$$



test yourself

Try these for yourself. The answers are on p. 75.

**1.3** Find the missing number in the following sequence.

53   47   41   ?   29

**1.4** Find the missing number in the following sequence.

12   ?   30   39   48

**1.5** Find the two missing numbers in the following sequence.

11   22   17   ?   ?   18   29   16

**HINT**  
Two sequences are involved.

**1.6** Find the two missing numbers in the following sequence.

2   10   6   7   10   ?   ?   1

**1.7** Find the two missing numbers in the following sequence.

0   ?   5   20   ?   10   15   0

**1.8** Find the two missing numbers in the following sequence.

32   ?   ?   18   20   11   14   4

**Changing differences**

If the difference is not constant, it is still possible for a pattern to exist.

★ example \_\_\_\_\_

**1.9** Find the missing number in the following sequence.

12   14   18   24   ?   42

There is a pattern in the differences.

### How to find the answer

The difference is increasing by 2 each time as shown.

$2 \quad 4 \quad 6 \quad 8$   
 $12 \quad 14 \quad 18 \quad 24 \quad ? \quad 42$

The fourth difference could be 8 and the missing term could be 32.  
 As a check, the fifth difference should be 10 and  $32 + 10 = 42$  which is correct.

★ example \_\_\_\_\_

**1.10** Find the missing number in the following sequence.

2    ?    50    250    1250

Rapidly growing sequences suggest multiplication.

### How to find the answer

The differences are little help here. The rapid increase in terms is a clue. There is a *common multiplier*. That is, each term is five times the previous one. The missing term is 10.

$\quad \quad \times 5 \quad \quad \quad \times 5 \quad \quad \times 5$   
 $2 \quad \quad ? \quad \quad 50 \quad \quad 250 \quad \quad 1250$

### Changing differences – a special case

The square numbers commonly appear in number sequences.

★ example \_\_\_\_\_

HINT

A square number is a whole number multiplied by itself eg:  
 $2^2 = 2 \times 2 = 4$   
 $3^3 = 3 \times 3 = 9$

**1.11** Find the missing number in the following sequence.

4    9    ?    25    36

Watch out for the square numbers, 1, 4, 9, 16, 25, 36, ...

4 is  $2^2$ , 9 is  $3^2$ , ?, 25 is  $5^2$  and 36 is  $6^2$ . The missing term must be  $4^2$  which is 16.

★ test yourself

Try these for yourself. The answers are on p. 75.

**HINT**

Look for the common multiplier.

**1.12** Find the missing number in the following sequence.

5    15    ?    135    405

**1.13** Find the missing number in the following sequence.

768    192    48    ?    3

**HINT**

Look for square numbers.

**1.14** Find the missing number in the following sequence.

81    49    ?    9    1

**1.15** Find the missing number in the following sequence.

2    5    ?    17    26

**HINT**

Sequence 1:  
look for square numbers.  
Sequence 2:  
look for the common multiplier.

**1.16** Find the two missing numbers in the following sequence.

1    2    4    4    ?    8    16    ?

**1.17** Find the two missing numbers in the following sequence.

25    3    16    6    ?    ?    4    12

**Question type 2:  
NUMBER SQUARES**

This type of question also tests your ability to find number patterns and relationships, but in a square grid format.

Two patterns exist:

- one that works horizontally for the rows
- another that works vertically for the columns



example

**2.1** Find the numbers that should be in the squares with the question marks.

First use one pattern to find the missing number(s). Then check the other pattern.

$3 + 6 = 9$	3	7	11	$3 + 4 = 7$
	9	?	17	$7 + 4 = 11$
$9 + 6 = 15$	15	19	?	$9 + 4 = 13$
				$13 + 4 = 17$
				$15 + 4 = 19$
				$19 + 4 = 23$

**How to find the answer**

In the number square above, the pattern in the rows is ‘add 4’, and the pattern in the columns is ‘add 6’.

This means that the two missing numbers must be 13 and 23.

Number Squares can be made more difficult by leaving out some information represented by a dot or a dash in addition to the number to be found.

**2.2** Find the number that should be in the square with the question mark.

The most obvious pattern is in the rows. Then check for a pattern in the columns.

$3 \times 2 = 6$	3	6	.	$6 \times 2 = 12$
$1 \times 2 = 2$	1	2	4	$2 \times 2 = 4$
$2 \times 2 = 4$	?	4	8	$2 \times 4 = 8$
$2 \times 4 = 8$				



**How to find the answer**

From rows 1 and 3, it appears that the horizontal pattern may be 'multiply by 2'.

Checking vertically, notice that in each column the top number is the sum of the bottom two numbers in that column. That is:  $3 - 1 = 2$ ;  $6 - 2 = 4$ ;  $12 - 4 = 8$ . So the missing number is 2.

★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 75.

**HINT**

Look for a different multiplier in each direction.

**2.3** Find the number that should be in the square with the question mark.

1	.	16
3	12	48
?	36	144

**2.4** Find the number that should be in the square with the question mark.

2	3	4
5	?	7
8	9	10

**2.5** Find the number that should be in the square with the question mark.

1	5	25
2	–	50
4	20	?

2.6 Find the number that should be in the square with the question mark.

.	4	1
8	6	3
12	?	7

2.7 Find the number that should be in the square with the question mark.

1	2	.
2	.	6
?	8	12

# chapter five

## non-verbal reasoning

What are non-verbal reasoning questions?

Non-verbal, or abstract, reasoning questions are designed to test your ability to discover visual patterns. To work out the answers, first look carefully at the diagrams to identify the rules and relationships. Then apply the rules and relationships to identify the next figure in the sequence or the missing part. You are usually asked to identify the simplest rules.



### Question type 1: LINEAR PATTERN SEQUENCES

In this type of question you are asked to choose the next figure in the sequence from a set of four choices. You need to work out the relationships between the figures and then identify which one of the choices logically continues the sequence.



example

*Find the next figure in the sequence.*

1.1

Here is a sequence of four pictures showing a pattern.

1 2 3 4

Here is your set of four choices. Find which one continues the sequence.

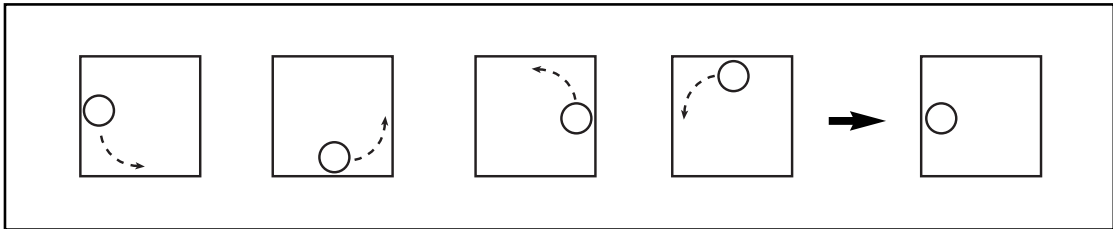
A B C D

Show your answer clearly.  
Only one choice is correct.

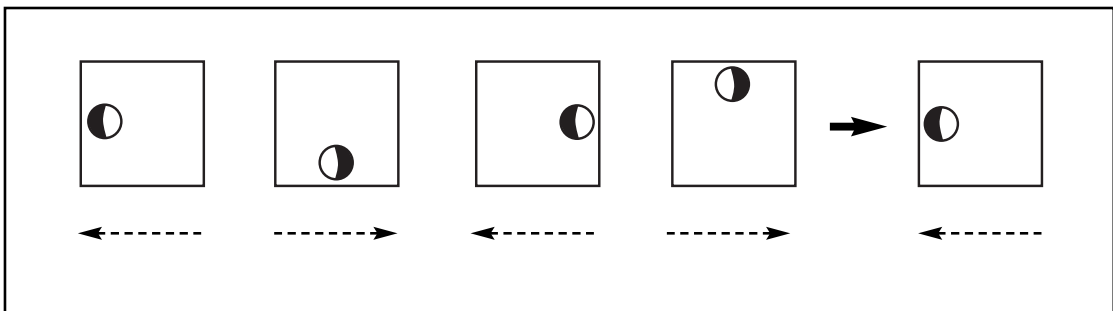
### How to find the answer

- When you look at the sequence of four figures you can see three different aspects of the shapes making up the pattern: the position of the ball, the shading on the ball and the diagonal lines.

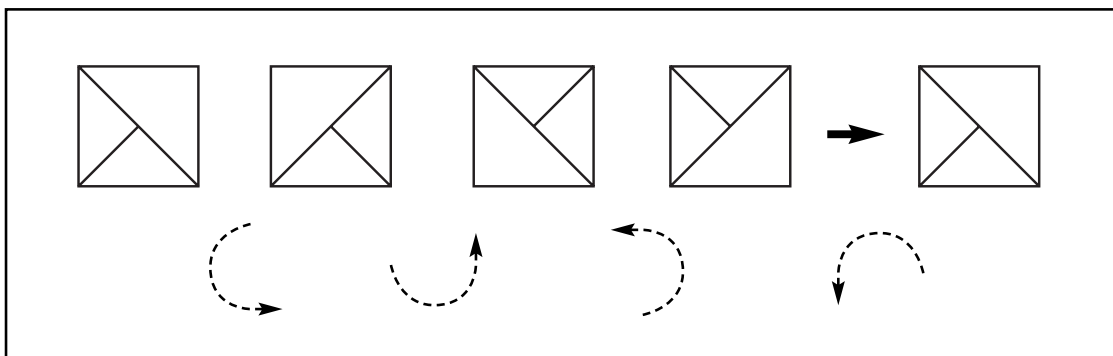
- If you follow the ball you can see that it is moving anticlockwise, from left to bottom to right to top.



- This sequence suggests that in the fifth figure – the one you need to identify – the ball will be left again, as in A, B and C.
- If you look at the shading on the ball you can see that the shaded part of the ball alternates left, right, left, right.



- This suggests that in the fifth figure it will be on the left, as in B and D.
- If you follow the diagonal pattern you can see that the diagonal pattern rotates anti-clockwise from position 1 to position 2, then position 3, then position 4.



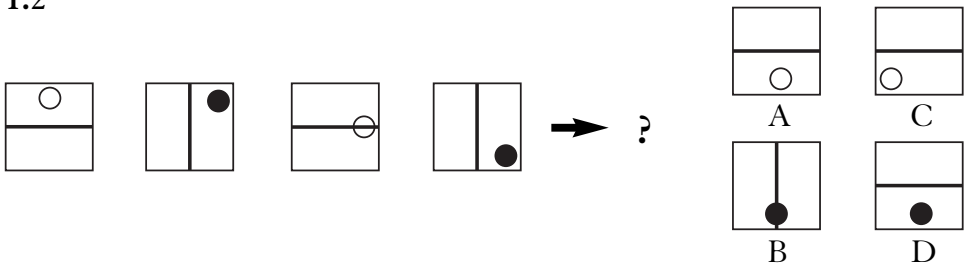
- This suggests that in the fifth figure it will be in position 1 again, as in A and B. From this rule, the correct choice could be A or B. B is the only choice that matches all the rules. The answer is **B**.

★ test yourself \_\_\_\_\_

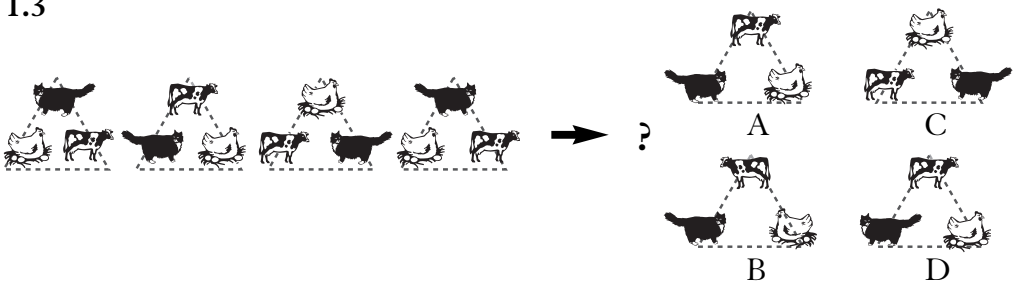
Try these for yourself. The answers are on p. 76.

Find the next figure in the sequence.

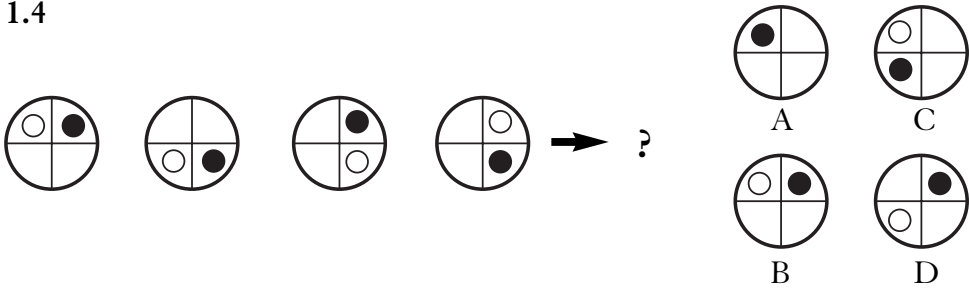
1.2



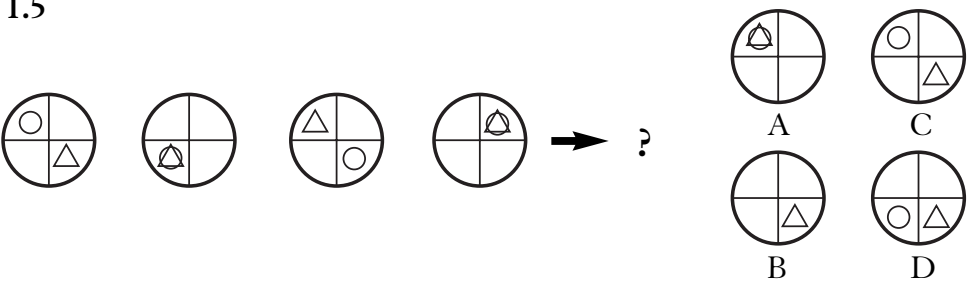
1.3

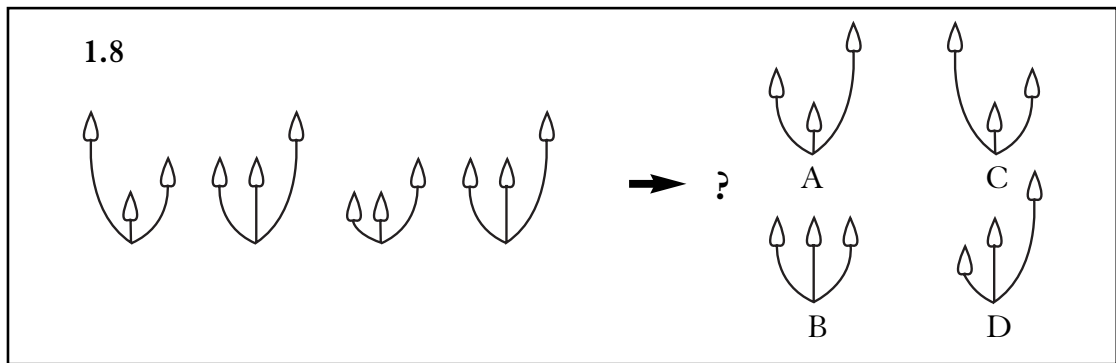
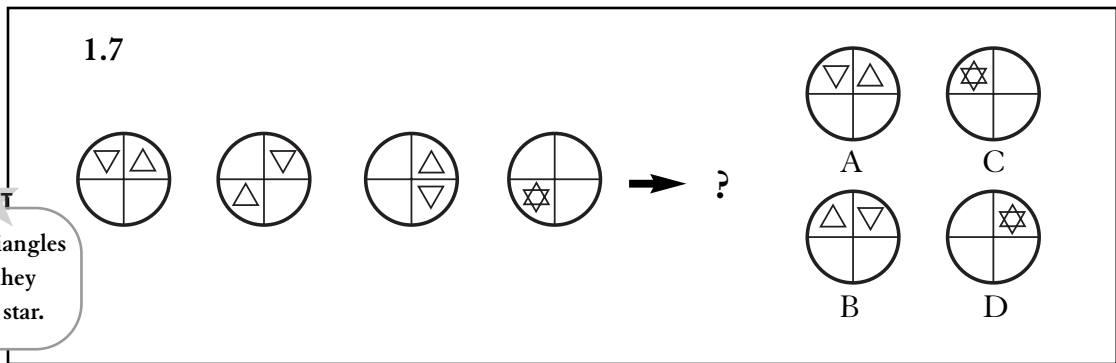
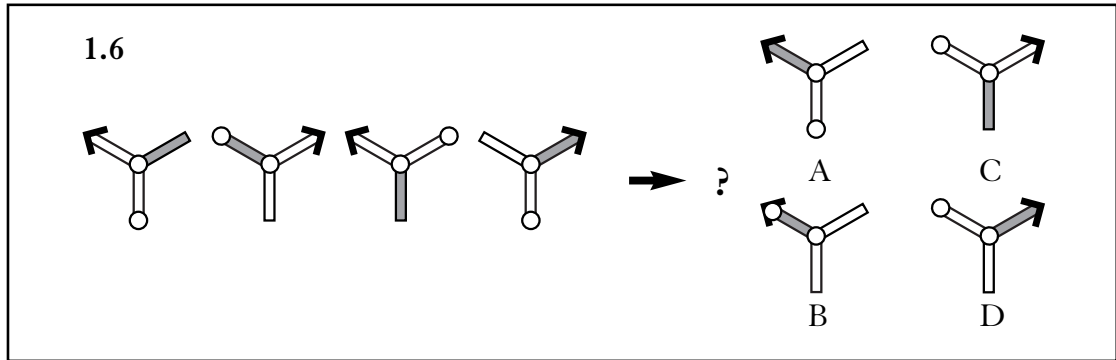


1.4



1.5





**Question type 2:**  
**FRAMEWORK PATTERNS**

This type of question tests your ability to recognise patterns in a framework of shapes.

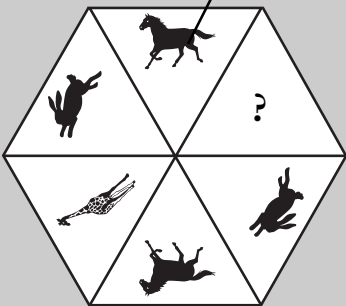
You need to identify the rule(s) for the pattern and then apply it to the missing part in the framework. The pattern may be based on symmetry or some other rule. Often, two or more rules are operating together.



example


*Find the missing part.*

2.1




Here are four shapes from which to choose the one that fills the missing part of the pattern.


A




C



B



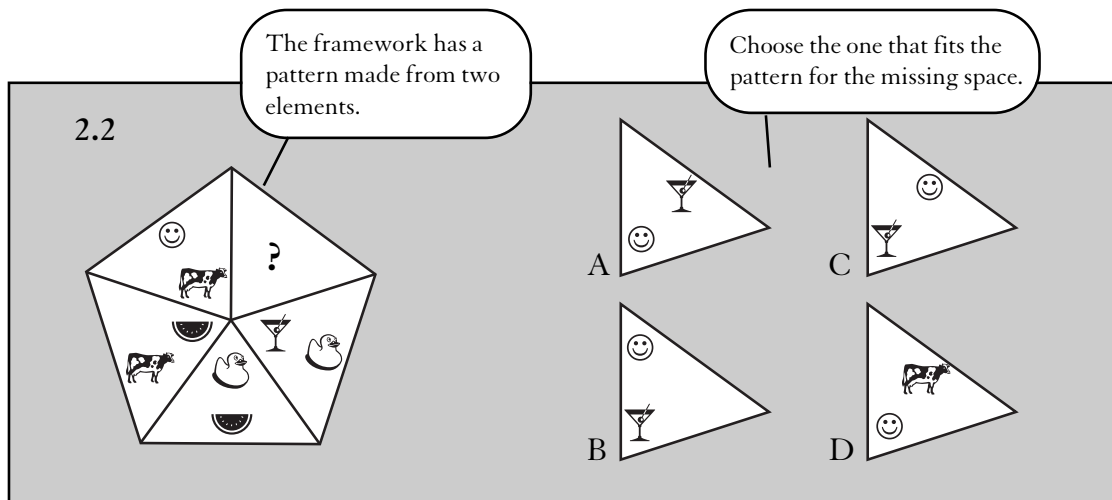
D



**How to find the answer**

- The missing shape must fit the space in the framework without rotation.
- When you look at the framework you can see that the pattern is made up of animals in pairs opposite each other, so the missing animal is a giraffe.
- The animals are reflected across a line going through the centre, so the answer must be the choice that shows the giraffe's feet towards the centre and facing clockwise.

The answer is **A**.



### How to find the answer

- Look at the shapes in each segment of the framework. Moving clockwise from segment to segment, you can see the image that is near the outside of one segment is near the centre of the next. For example, the cow moves from the outside to the inside, etc.
- The smiley face near the outside of the top left segment will be near the centre of the missing segment, as in A and D.
- The glass near the centre of the bottom right segment will be near the outside of the next (missing) segment, as in A.
- Check that the next part of the pattern continues in the same way.

The correct answer is **A**.

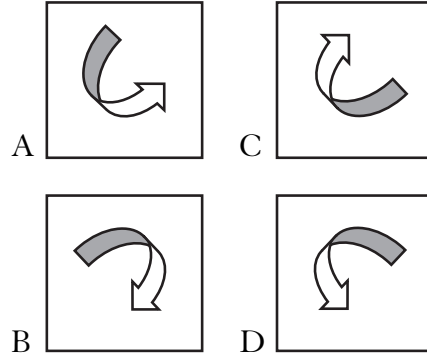
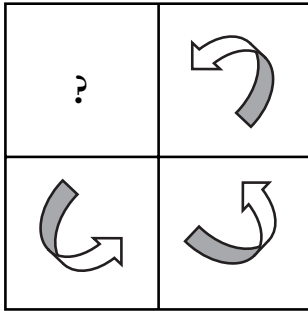


★ test yourself

Try these for yourself. The answers are on p. 76.

Find the missing part.

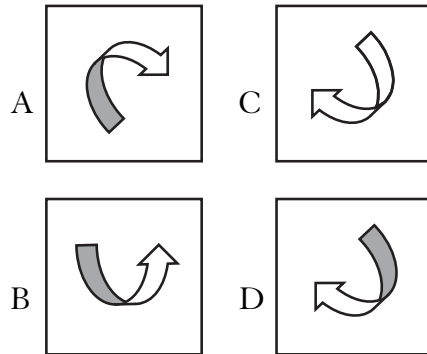
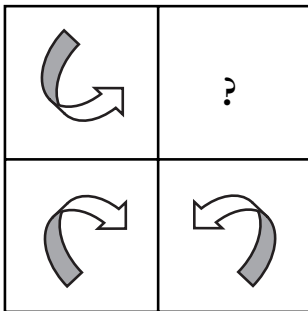
2.3



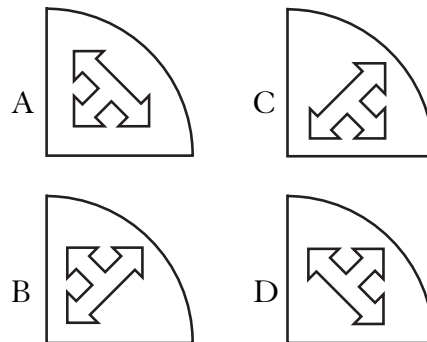
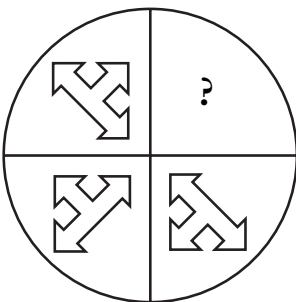
HINT

Anticlockwise rotation.

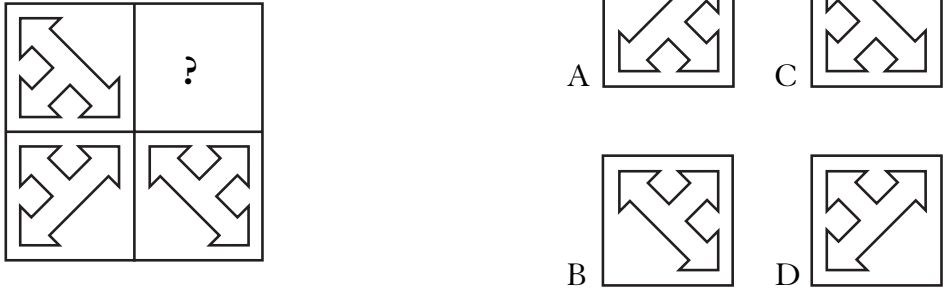
2.4



2.5

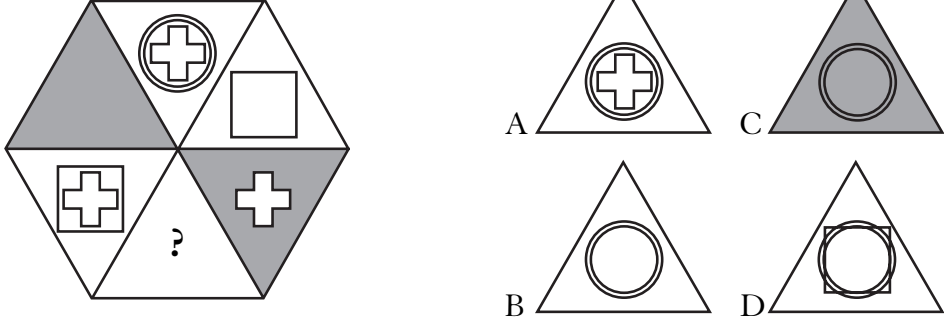


2.6



A B C D

2.7



A B C D

**HINT**  
Consider the shapes separately.

## chapter six

# spatial–visual reasoning

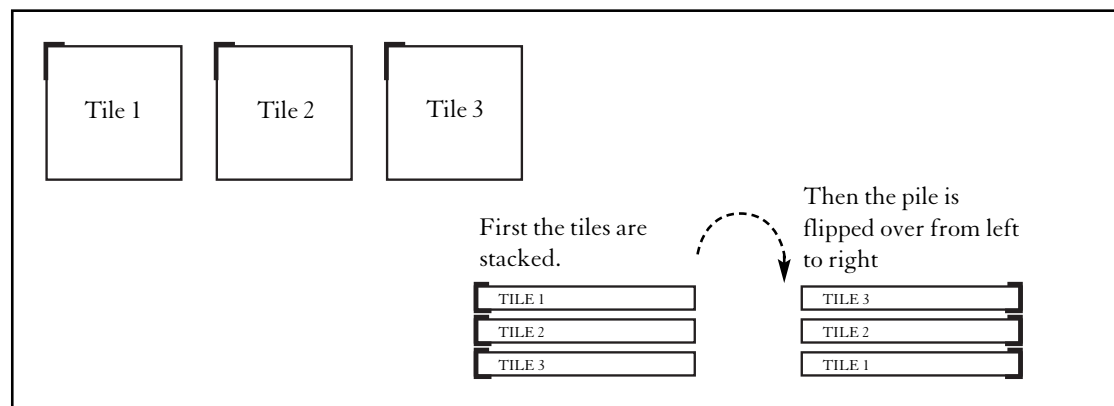
What are spatial–visual reasoning questions?

Spatial-visual reasoning questions test your ability to visualise objects in space using pictures or diagrams. These questions may only appear in selection tests for positions that require high levels of spatial–visual ability.



### Question type 1: TRANSPARENT TILES

For this type of question, you need to recognise how three transparent tiles would look when they are stacked one on top of the other and flipped over **from left to right**. Note that white shapes on a pattern are transparent but shaded shapes are not. Also note that one square has a double border to help identify it when it is flipped over from left to right.



Try answering this example question and then read the explanation that follows.

★ example

1.1 Of the four alternatives (labelled A, B, C and D), which shows correctly how the stack would look after turning it over from left to right?

Imagine what these three tiles will look like when they are stacked.

Which of these four pictures shows what you will see when the stack is flipped over from left to right?

**How to find the answer**

- When the tiles are stacked, the top left square will have a double border and contain a double circle. The top right square will have a shaded arrow-cross because it covers the clear (white) cross. The bottom right square will have a double circle and the bottom left square will have nothing in it.
- When flipped over from left to right, the figures that were in left-hand squares will move to right-hand squares, and vice versa.
- The square with the double border and the double circle will be in the right top corner of the shape. So the answer might still be any of A, B, C or D.
- The lower double circle will be on the left, as in A, B and D.
- The shaded arrow-cross, **superimposed on the clear one**, will be on the left, as in A. (The answer cannot be B because the clear arrow-cross is in the wrong square.)

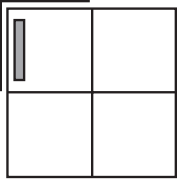
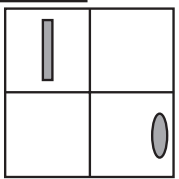
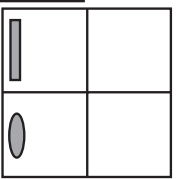
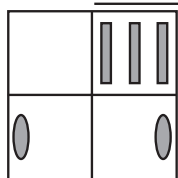
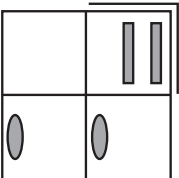
The answer is **A**.

★ test yourself \_\_\_\_\_

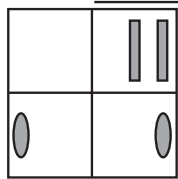
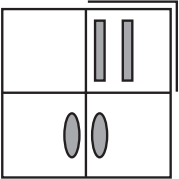
Try these for yourself. The answers are on p. 76.

*Of the four alternatives (labelled A, B, C and D), which shows correctly how the stack would look after turning it over from left to right?*

1.2

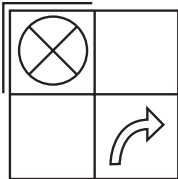
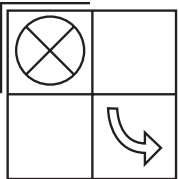
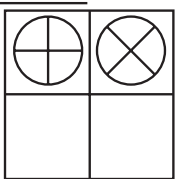
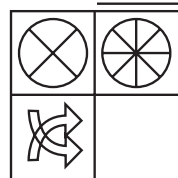
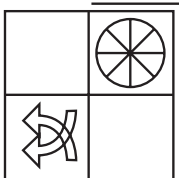



  



A C

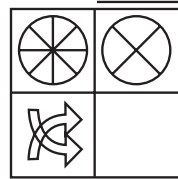
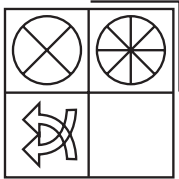
  



B D

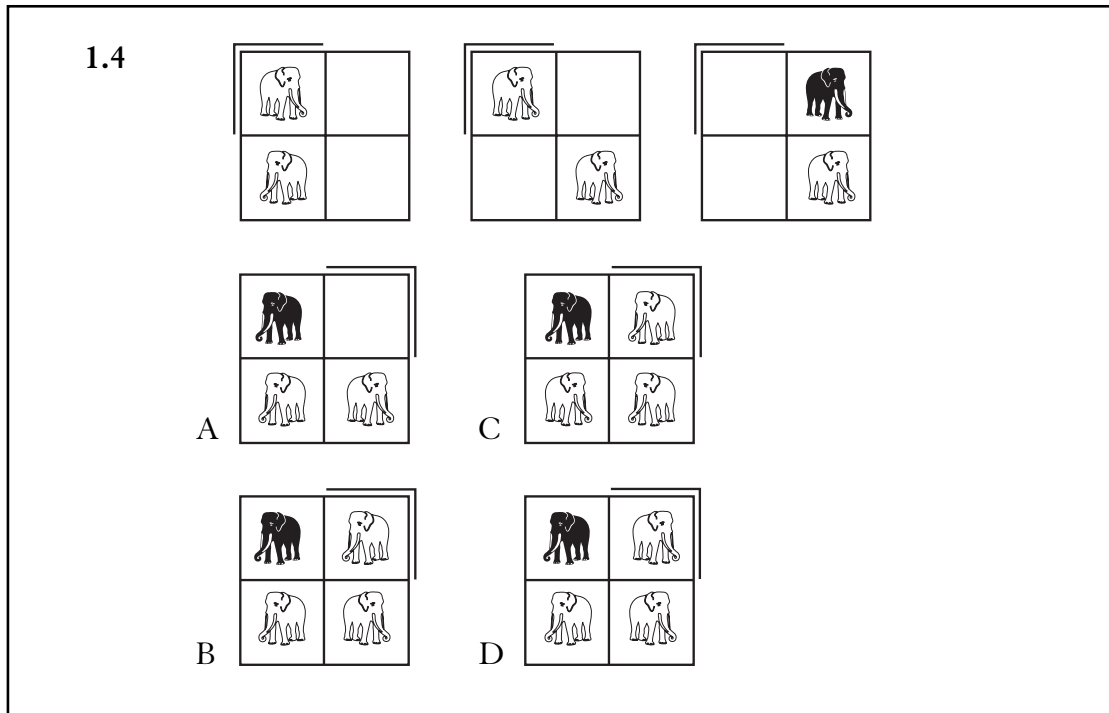
1.3

A C

B D



**Question type 2:  
OVERLAPPING TILES**

For this type of question a set of overlapping tiles is presented. The tiles are not transparent so you cannot see through them. You need to imagine what the set of tiles will look like when they are flipped over from left to right. Each tile has the same colour or pattern on its back and so looks the same when flipped over.

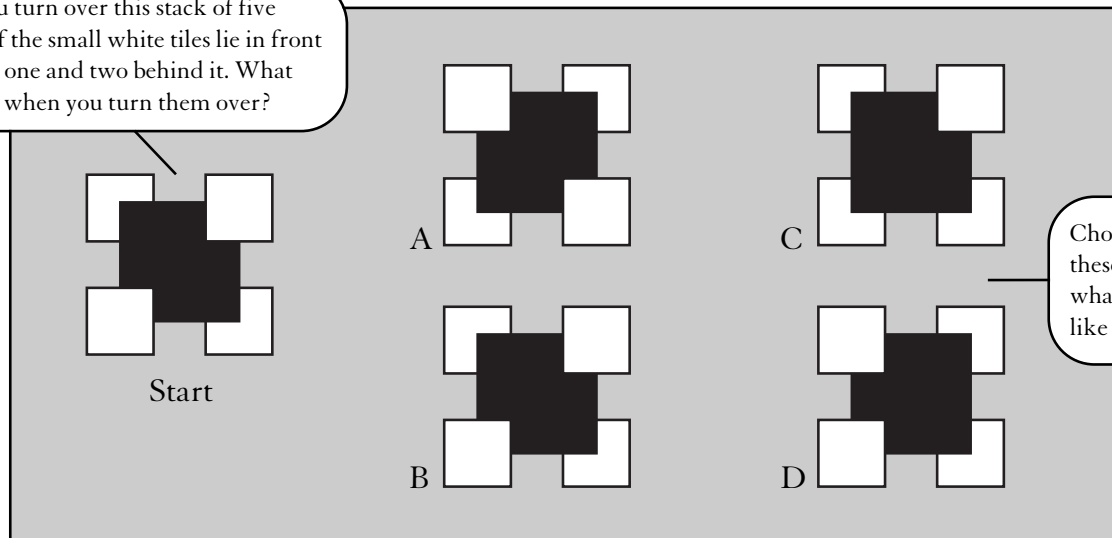
To work out the answers, look carefully at the diagram and imagine it as a three-dimensional object in which parts of the object are in front of others and parts are behind. When flipped, tiles on the left will move to the right, and vice versa, and tiles that were behind will now be in front, and vice versa.



example

**2.1** Choose one of the four alternatives (labelled A, B, C and D) which shows how the stack would look after turning it over from left to right.

Imagine you turn over this stack of five tiles. Two of the small white tiles lie in front of the black one and two behind it. What will you see when you turn them over?



Choose one of these four to show what the tiles look like now.

### How to find the answer

- You can see the starting figure has one black tile in the middle and four small white tiles. Two of the white tiles are diagonally opposite each other and on top of the black tile, and the other two are underneath it.
- After the tiles are flipped left to right, each white tile will move to the opposite side of the large black tile – left to right, right to left. And, if a tile was on top it will move underneath and vice versa.
- Look at the white square at the top left corner. It is originally to the left of the black square, and underneath it, so it will move to the right of the black square, and on top of it – as in B and C.
- Look at the white square on the bottom left corner. It will be on the right and underneath, like B, C and D.
- Look at the white square on the top right corner. It will now be on the left and underneath, like B and C.
- Look at the white square on the bottom right corner. It will now be on the left and on top as in B and D.

The answer is **B**.

★ test yourself

Try these for yourself. The answers are on p. 76.

Choose one of the four alternatives (labelled A, B, C and D) which shows how the stack would look after turning it over from left to right.

2.2

Start

A

B

C

D

2.3

A

B

C

D

2.4

A

B

C

D



**Question type 3:**  
**BIRD’S-EYE VIEWS OF REAL FEATURES**

This type of question tests your ability to visualise different perspectives using pictures, maps or diagrams that show a bird’s-eye view. You are given a picture or diagram from one point of view and you need to identify the same picture or diagram from a different view.

To work out the answer, identify the elements that you are seeing in the original picture and their relationships to each other. Then imagine that you are seeing the same elements from a different point of view. All of the elements must maintain the same relationship. To get the answer, you often need to pay close attention to the detail.

★ example \_\_\_\_\_

3.1 Which picture best represents the island from a different point of view?

Look very carefully at the main elements in this aerial shot.

A

B

C

D

You need to compare each of these versions and identify which one matches the island from a bird’s-eye view.

**How to find the answer**

- Look carefully at the main elements of the picture. You can see a large island with several small islands nearby. Two of the islands are located out from a small peninsula on the west of the island and a slightly larger one out to the east. There are two rivers flowing down from higher ground to the coast.
- Look at the pair of small islands. These islands need to be at the end of a peninsula near the shorter river. The smaller of these two is furthest from the coast.
- In C, the pair of small islands is located near the mouth of the longer river not the shorter one.
- In D the pair of islands and the other small island have been interchanged.
- In B and D features of the large island has been reversed.
- Check choice A. All of the elements must remain in the same relationship as in the original.

The answer is **A**.

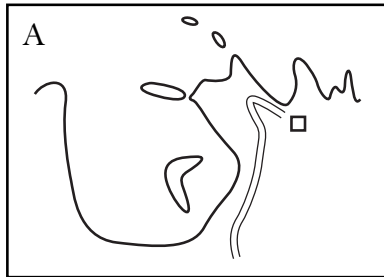
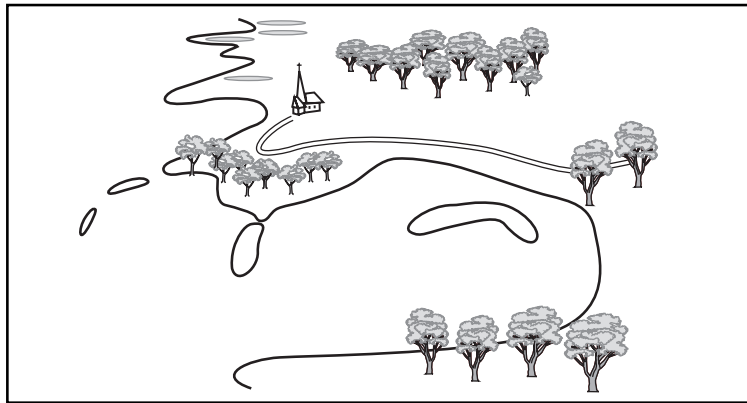
★ test yourself \_\_\_\_\_

Try these for yourself. The answers are on p. 76.

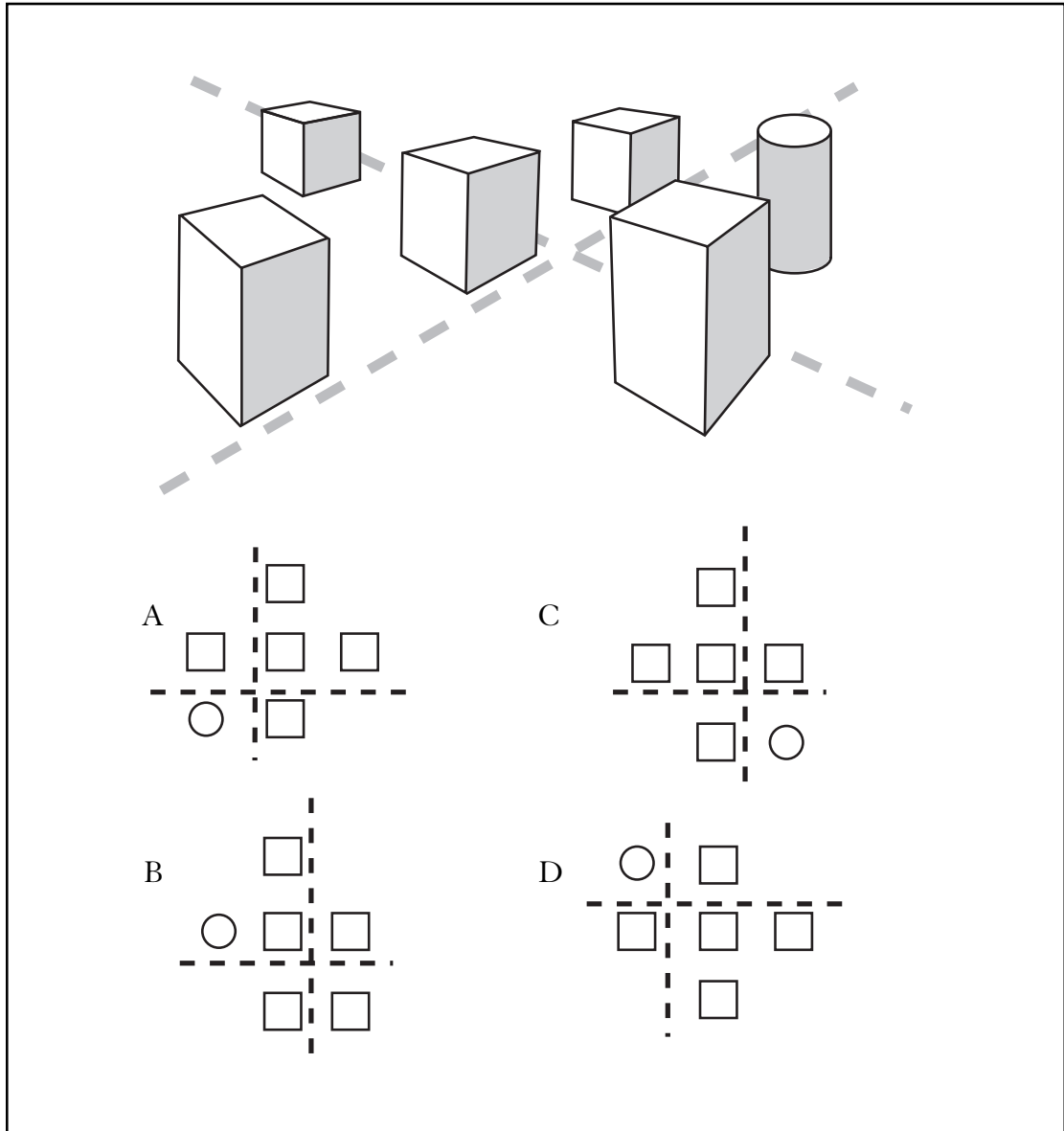
3.2 Which map best represents the picture from a different point of view?

HINT

The building in the main picture is represented by the symbol □ in the bird's-eye view.



3.3 Which diagram best represents the bird's-eye picture from a different point of view?



# appendix one answers



## CHAPTER ONE WORD KNOWLEDGE

1.1	D and E	4.1	E	6.1	B and E
1.2	B and C	4.2	B	6.2	C and E
1.3	C and E	4.3	D	6.3	B and D
1.4	A and B	4.4	D	6.4	A and D
		4.5	A	6.5	B and D
2.1	D	4.6	E		
2.2	E	4.7	D	7.1	C
2.3	D	4.8	C	7.2	D
2.4	E	4.9	E	7.3	A
				7.4	D
3.1	C	5.1	B		
3.2	B	5.2	C		
3.3	D	5.3	D		
3.4	A	5.4	A		

## CHAPTER TWO READING COMPREHENSION

1.1	D	2.1	B	3.1	C
1.2	C	2.2	B	3.2	B
1.3	B	2.3	C	3.3	C
1.4	D	2.4	A	3.4	A
1.5	D				
1.6	B				

**CHAPTER THREE MATHEMATICAL PROBLEMS**

<b>1.1</b>	<b>A</b>	<b>2.1</b>	<b>D</b>	3.6	B
1.2	A	2.2	B	3.7	B
1.3	B	2.3	C	3.8	C
1.4	B	2.4	B	3.9	C
1.5	D	2.5	B	3.10	B
1.6	E	2.6	A	3.11	A
1.7	B	2.7	B	3.12	D
1.8	A			3.13	B
1.9	A	<b>3.1</b>	<b>A</b>	3.14	50 hours
1.10	B	<b>3.2</b>	<b>D</b>	3.15	B
1.11	D	<b>3.3</b>	<b>B</b>	3.16	B
		3.4	A	3.17	5 cubic metres
		3.5	D	3.18	8 metres

**CHAPTER FOUR NUMBER SEQUENCES AND PATTERNS**

<b>1.1</b>	<b>14</b>	<b>2.1</b>	<b>13 and 23</b>
<b>1.2</b>	<b>16 and 12</b>	<b>2.2</b>	<b>2</b>
1.3	35	2.3	9
1.4	21	2.4	6
1.5	20 and 23	2.5	100
1.6	4 and 14	2.6	10
1.7	30 and 10	2.7	4
1.8	25 and 26		
<b>1.9</b>	<b>32</b>		
<b>1.10</b>	<b>10</b>		
<b>1.11</b>	<b>16</b>		
1.12	45		
1.13	12		
1.14	25		
1.15	10		
1.16	9 and 16		
1.17	9 and 9		

### CHAPTER FIVE NON-VERBAL REASONING

- |     |   |     |   |
|-----|---|-----|---|
| 1.1 | B | 2.1 | A |
| 1.2 | A | 2.2 | A |
| 1.3 | D | 2.3 | D |
| 1.4 | B | 2.4 | D |
| 1.5 | C | 2.5 | C |
| 1.6 | B | 2.6 | A |
| 1.7 | A | 2.7 | B |
| 1.8 | C |     |   |

### CHAPTER SIX SPATIAL-VISUAL REASONING

- |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|
| 1.1 | A | 2.1 | B | 3.1 | A |
| 1.2 | B | 2.2 | D | 3.2 | C |
| 1.3 | D | 2.3 | D | 3.3 | C |
| 1.4 | B | 2.4 | C |     |   |

## appendix two answer sheets

Depending on the test you are taking, you may be asked to mark your answers on the question sheet itself or on a separate answer sheet. Tests with separate answer sheets are often in the form of an OMR – a special machine-readable answer sheet which allows answers to be scored by computer.

### HINT

Copying the 'right' answer into the 'wrong' question can happen easily. Check the number of the question on the question sheet and answer sheet to make sure you are filling in the right circle.

As well as marking your answers on the OMR answer sheet, you may need to mark in some personal details, such as your name and date of birth, at the top of the sheet.

To mark an answer on the OMR answer sheet, follow the instructions carefully. The method for filling in an answer can be different from test to test. Usually, you are required to colour in a circle or oval next to the answer that you have chosen. Take care to colour in the whole circle.



### example

The OMR answer sheet on page XX has been partially filled in with this data:

Mr John Semple

Date of birth: 16 December, 1969

Answers to Part 1:

1. A
2. D
3. C
4. C
5. B

Fill in some more of the OMR answer sheet with this data:

- |       |       |       |       |       |
|-------|-------|-------|-------|-------|
| 6. D  | 11. C | 16. A | 21. C | 26. E |
| 7. A  | 12. B | 17. A | 22. B | 27. E |
| 8. A  | 13. D | 18. D | 23. A | 28. B |
| 9. D  | 14. B | 19. A | 24. E | 29. A |
| 10. C | 15. D | 20. A | 25. D | 30. E |



NAME:

John Semple

ORGANISATION:

DATE:

22/10/03

**INSTRUCTIONS:**

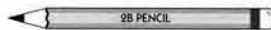
- Use pencil only, preferably 2B
- Do **not** use any pens or ball-point pens
- Erase mistakes fully
- Make no stray marks

Please MARK LIKE THIS ONLY:



Example:

Print name in boxes here, then mark oval corresponding to the letter in each column.



FAMILY NAME											INITS	
S	E	M	P	L	E						J	
A	A	A	A	A	A	A	A	A	A	A	A	A
B	B	B	B	B	B	B	B	B	B	B	B	B
C	C	C	C	C	C	C	C	C	C	C	C	C
D	D	D	D	D	D	D	D	D	D	D	D	D
E	E	E	E	E	E	E	E	E	E	E	E	E
F	F	F	F	F	F	F	F	F	F	F	F	F
G	G	G	G	G	G	G	G	G	G	G	G	G
H	H	H	H	H	H	H	H	H	H	H	H	H
I	I	I	I	I	I	I	I	I	I	I	I	I
J	J	J	J	J	J	J	J	J	J	J	J	J
K	K	K	K	K	K	K	K	K	K	K	K	K
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N	N	N	N	N	N	N	N	N	N	N	N	N
O	O	O	O	O	O	O	O	O	O	O	O	O
P	P	P	P	P	P	P	P	P	P	P	P	P
Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q
R	R	R	R	R	R	R	R	R	R	R	R	R
S	S	S	S	S	S	S	S	S	S	S	S	S
T	T	T	T	T	T	T	T	T	T	T	T	T
U	U	U	U	U	U	U	U	U	U	U	U	U
V	V	V	V	V	V	V	V	V	V	V	V	V
W	W	W	W	W	W	W	W	W	W	W	W	W
X	X	X	X	X	X	X	X	X	X	X	X	X
Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z

DATE OF BIRTH								
DAY			MTH		YEAR			
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5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6
7	7	7	7	7	7	7	7	7
8	8	8	8	8	8	8	8	8
9	9	9	9	9	9	9	9	9

OFFICE USE ONLY

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8	8	8	8	8	8
9	9	9	9	9	9

GENDER	
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M	F

PART 1		PART 2		PART 3		PART 4	
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2	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input checked="" type="radio"/> E	17	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	32	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D <input type="radio"/> E	47	<input type="radio"/> A <input type="radio"/> B <input type="radio"/> C <input type="radio"/> D
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DO NOT FOLD OR DEFACE THIS SHEET IN ANY WAY



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