GL Assessment Introductory Guide

Verbal Reasoning
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GL Assessment®

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Verbal Reasoning

About Verbal Reasoning tests

Verbal Reasoning (VR) tests mainly involve reasoning with words and typically include a variety of question types that involve the production of, use of, and relationships between, words. Some VR tests also involve the manipulation of letters and numbers; these question types use letters and numbers as symbols to predict, for example, a sequence or relationship.

VR tests have been used for many years because research has found them to be a good predictor of future academic attainment.

This guide serves to provide an introduction to the types of questions that may be included within a VR test. Not all the question types presented here will necessarily be included in a real test and there will certainly be some extra item types not shown.

The VR tests are multiple-choice, which means there are a number of answer options to choose from for each question. You will mark your choice of answer option on a separate answer sheet for the real tests, but for this introductory guide a small section of the answer sheet has been reproduced on page 9 for you to practise marking your answers. Correct answers to the practice questions, together with their solutions, are provided on pages 10 and 11.

Example and Practice Questions

Provided below are examples of some of the types of VR questions you could come across in the real test. The example questions have the correct answer marked on the sample answer sheet on page 9 so that you can see how to mark your answers properly. There are further practice questions below each example, so you can practise working them out and marking the answers yourself on the answer sheet.

Production of Words

In these questions, the three words in the second group should go together in the **same way** as the three in the first group. Find the word that is missing in the second group and mark it on the answer sheet.

Example (man [mat] tip) (bug [?] dew)

A bud **B** beg **C** dug **D** bed **E** wed

Answer **bud**

In this question, the first two letters of 'man' and the first letter of 'tip' are put together to make the word 'mat'. In the same way, the first two letters from the word 'bug' and the first letter from the word 'dew' are put together to make the word '**bud**' and this has been marked on the answer sheet on page 9.

Now try these two practice questions and mark your answers on page 9.

P1 (spark [lean] lend) (weary [?] cold)

A deal **B** clod **C** lace **D** coal **E** dare

P2 (brown [sort] wrist) (wound [?] arise)

A sure **B** wise **C** send **D** dine **E** near

Relationships between Words

In these questions, three of the five words are related in some way. Find the **two** words that do not go with these three and mark them both on the answer sheet.

Example black mouse red green hut

A black **B** mouse **C** red **D** green **E** hut

Answer **mouse** **hut**

In this question, the words 'black', 'red' and 'green' are related because they are all colours; the words '**mouse**' and '**hut**' do not go with these three words and they have been marked on the answer sheet on page 9.

Now try these two practice questions and mark your answers on the answer sheet. Don't forget, you must mark **two** answer options on your answer sheet for each of these questions.

P3

worried confident scared anxious sure

A worried **B** confident **C** scared **D** anxious **E** sure

P4

football kick netball walking hockey

A football **B** kick **C** netball **D** walking **E** hockey

Manipulation of Letters

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

The alphabet is here to help you with these questions. Find the letters that will complete the series in the best way and mark the correct answer on the answer sheet.

Example CQ DQ EP FP [?]

A GP **B** GO **C** HO **D** GR **E** GQ

Answer **GO**

In this question, the letters are grouped into pairs. The first letter in each pair is in alphabetical order: C, D, E, F. The second letter in each pair features twice in the series, and appears in reverse alphabetical order: Q, Q, P, P. Following this pattern, the next pair of letters after FP must be **GO**, and this pair of letters has been marked on the answer sheet on page 9.

Now try these two practice questions and mark your answers on the answer sheet.

P5 RD PG NJ LM [?]

A IO **B** JO **C** JP **D** PJ **E** KJ

P6 CX ZA WD TG [?]

A RI **B** RE **C** PI **D** QJ **E** QK

Manipulation of Numbers

In these questions the three numbers in each group are related in the same way. Find the number that completes the last group and mark it on the answer sheet.

Example (3 [6] 9) (2 [4] 6) (4 [?] 12)

A 3 **B** 4 **C** 6 **D** 8 **E** 10

Answer **8**

In this question, the number '6' in the first group of numbers is made by subtracting the first number in the group (3) from the third number in the group (9). In the same way, the number '4' in the second group of numbers is made by subtracting the first number in the group (2) from the third number in the group (6). Applying this rule to the third group of numbers will give the answer **8** and this has been marked on the answer sheet on page 9.

Now try these two practice questions and mark your answers on the answer sheet.

P7 (16 [10] 4) (4 [3] 2) (9 [?] 3)

A 4 **B** 7 **C** 6 **D** 27 **E** 12

P8 (4 [24] 8) (2 [10] 3) (7 [?] 1)

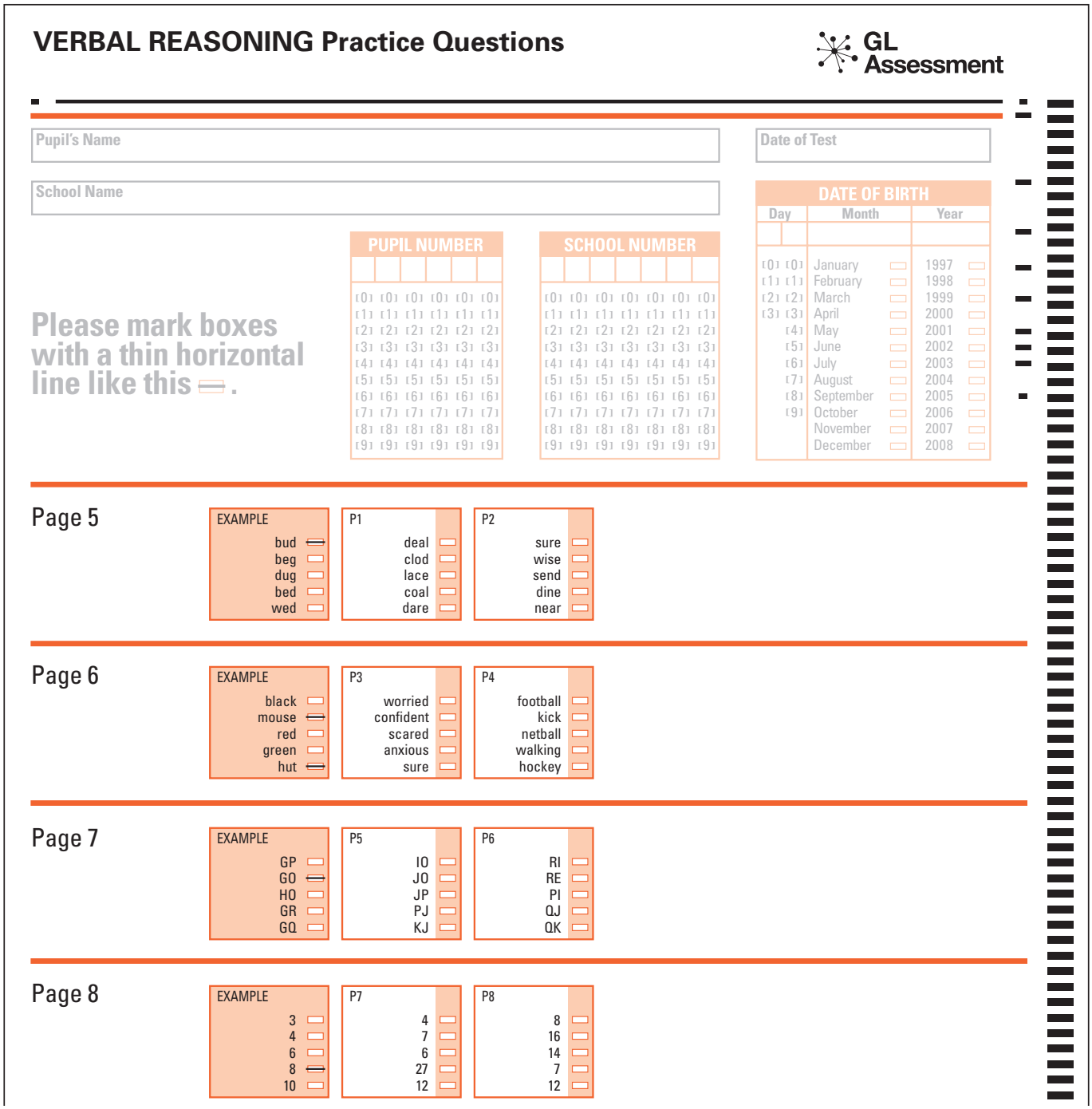
A 8 **B** 16 **C** 14 **D** 7 **E** 12

Marking your Answers on the Answer Sheet

The real test will be scored by a computer; the computer 'reads' the pencil marks that you make. Answers should be marked clearly in pencil like this ▬, with any mistakes carefully rubbed out (**not** crossed out). You must also make sure that you mark your answer in the box that has the same number as the question in the test booklet.

Remember, some question types require you to mark two answer options, so you must read the instructions carefully.

Sample Answer Sheet



Practice Questions: Answers & Solutions

P1

In the first bracketed group, the middle word [lean] has been made up from letters taken from the other two words. The first two letters, 'le', only occur in the last word (lend), whilst the next letter 'a' only occurs in the first word (spark). The last letter, 'n', is only found in 'lend', where it is the third letter. Applying the same rules to the second bracketed group, we must take the first two letters of the last word (cold), the third letter of the first word (weary) and the third letter of the last word (cold). This gives us the word **coal** (option **D**), which is the correct answer.

P2

In the first bracketed group, the middle word [sort] is been made up of the fourth letter of the last word (wrist) and the third letter of the first word (brown). We have a choice of where to find the next letter, 'r'; either the second letter of 'brown' or the second letter of 'wrist'. Finally we have the fifth letter of 'wrist'. Applying these rules to the second bracketed group, we take the fourth letter of the last word (arise), the third letter of the first word (wound), the second letter of either the first or last word (wound *or* arise) and finally the fifth letter of the last word (arise). This leaves us with **su*e**, where the ***** could be either 'o' or 'r'. Trying both in place of the asterisk, it is clear that the correct word must be **sure** (option **A**), since 'suoe' is not a real word.

P3

The words 'worried', 'scared' and 'anxious' mean the same thing. The words 'confident' and 'sure' are both opposites of these three words and are therefore different from the other three, so the answer is **confident**, **sure** (options **B** and **E**).

P4

The words 'football', 'netball' and 'hockey' are all types of sport involving a ball. The words 'kick' and 'walking' are both physical actions relating to one or more of these sports and are therefore different from the other three, so the answer is **kick**, **walking** (options **B** and **D**).

P5

The first letter in each pair decreases by two each time. The second letter in each pair increases by three each time. Using the same code, the next pair of letters after LM is **JP** (option **C**).

P6

The first letter in each pair decreases by three each time. The second letter in each pair increases by three each time. Notice how the letter Z in the second pair of letters is obtained by counting backwards from C around the alphabet, similarly, the letter A in the second pair of letters is obtained by counting forwards from X around the alphabet. Using the same code, the next pair of letters after TG is **QJ** (option **D**).

P7

The number 10 in the first group of numbers is made by adding the first number in the group, 16, to the third number in the group, 4, then dividing this number by 2. In the same way, the number 3 in the second group of numbers is made by adding the first number in the group, 4, to the third number in the group, 2, then dividing this number by 2. Applying this rule to the third group of numbers will give the answer **6** (option **C**).

P8

The number 24 in the first group of numbers is made by adding the first number in the group, 4, to the third number in the group, 8, then multiplying this number by 2. In the same way, the number 10 in the second group of numbers is made by adding the first number in the group, 2, to the third number in the group, 3, then multiplying this number by 2. Applying this rule to the third group of numbers will give the answer **16** (option **B**).

Non-Verbal Reasoning

About Non-Verbal Reasoning tests

Non-Verbal Reasoning (NVR) tests involve reasoning with abstract figures and typically include a variety of question types. For some questions you might look at relationships between shapes and sequences of shapes, by identifying common features from a set of figures and applying them to a new figure. Some NVR question types involve codes in which features of a shape have to be matched with letters. Because the test questions consist solely of abstract figures and not words, and because administration instructions are read out to the pupils, the effects of schooling and reading ability are reduced to a minimum. For this reason, NVR tests are sometimes considered a 'pure' measure of a pupil's reasoning ability.

NVR tests are a good predictor of academic achievement in later secondary school education (eg GCSE level). For pupils whose first language is not English or who have difficulty reading independently, NVR tests may provide a more realistic indication of their abilities.

This guide serves as an introduction to the types of questions that may be included within an NVR test, but not all the question types presented here will necessarily be included in the real test and it is likely that there will be some additional item types not shown.

The NVR tests are multiple-choice, which means there are a number of answer options to choose from for each question. You will mark your choice of answer option on a separate answer sheet for the real tests, but for this introductory guide a small section of the answer sheet has been reproduced on page 16 for you to practise marking your answers. Correct answers to the practice questions, together with their solutions, are provided on page 17.

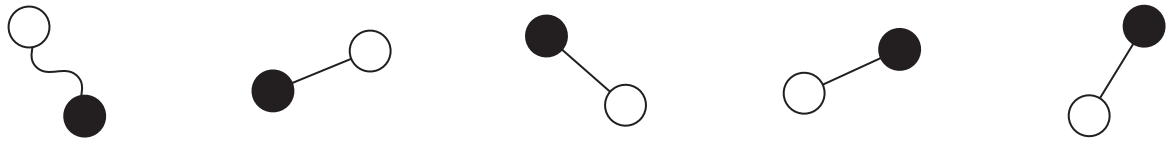
Example and Practice Questions

Provided below are examples of some of the types of NVR questions you could come across in the real test. The example questions have the correct answer marked on the sample answer sheet on page 16 so that you can see how to mark your answers properly. There are further practice questions below each example, so you can practise working them out and marking the answers yourself on the answer sheet.

Classes

In the row below there are five figures. Find one figure in the row that is **most unlike** the other four and **mark its letter on your answer sheet**.

Example



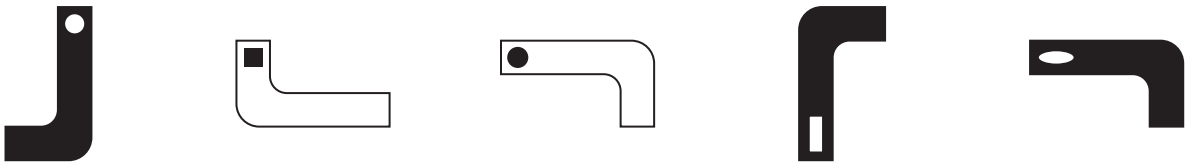
A **B** **C** **D** **E**

Answer **A**

In this question, **A** is the only figure in which the line that joins the circles is not straight. This makes **A** the correct answer, as shown on the answer sheet on page 16.

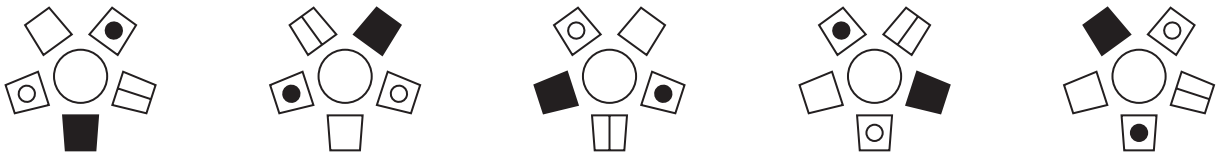
Now try these two practice questions and mark your answers on the answer sheet.

P1



A **B** **C** **D** **E**

P2

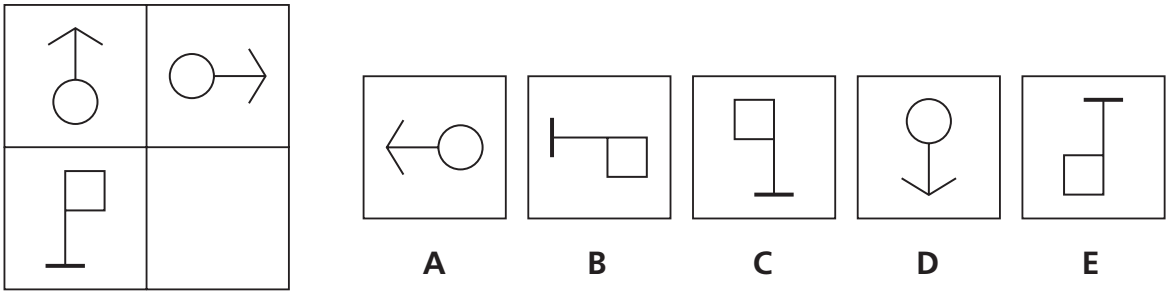


A **B** **C** **D** **E**

Matrices

In the big square on the left of each line below one of the small squares has been left empty. One of the five figures on the right should fill the empty square. Find this figure and **mark its letter on your answer sheet**.

Example

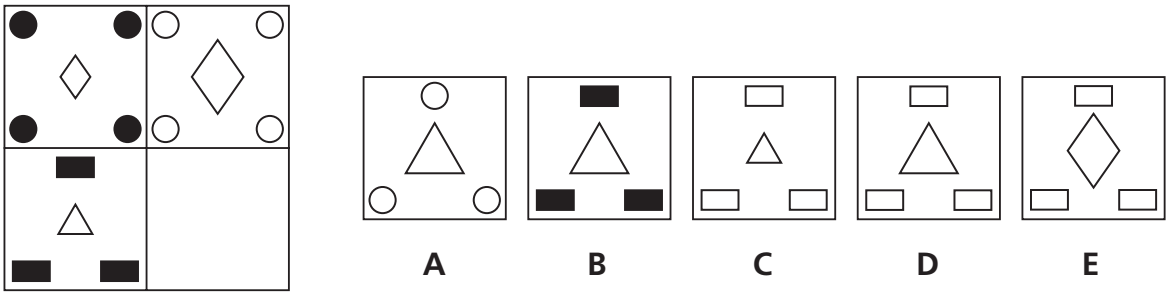


Answer **B**

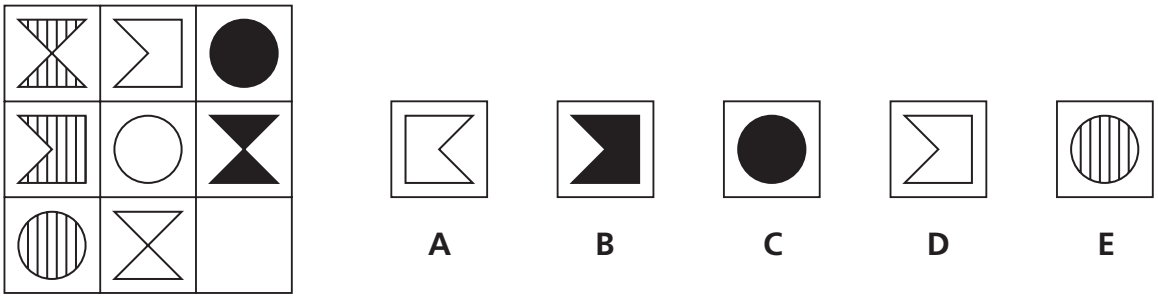
In this question, if you look at the top row of the large square on the left, the figure on the left is turned 90 degrees clockwise to produce the figure on the right. So the bottom-left shape should be turned in the same way. The correct answer is option **B** as shown on the answer sheet on page 16.

Now try these two practice questions and mark your answers on the answer sheet.

P3



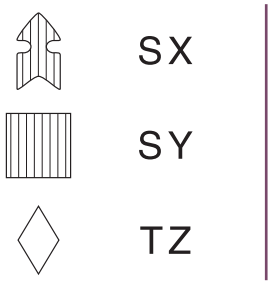
P4



Codes

To answer these questions you have to work out a code. On the left are some shapes and the codes that go with them. You must decide how the code letters go with the shapes. Then find the correct code for the test shape from the set of five codes on the right. **Mark its letter on your answer sheet.**

Example



TEST SHAPE

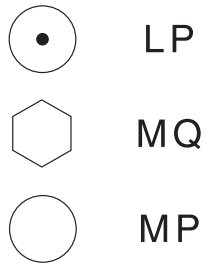
SZ	TY	TX	ST	TZ
A	**B**	**C**	**D**	**E**

Answer **A**

This code has two letters. The first letter is the same for both shaded shapes, so S must be the code for shading and T the code for white. The second letter is different for each shape, so X, Y and Z must be the codes for arrow, square and diamond respectively. Therefore the test shape must have an S code for shading and a Z code for diamond. So the correct answer is SZ and option **A** has been marked on the answer sheet on page 16.

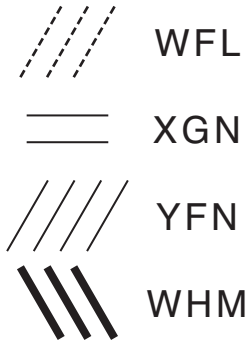
Now try these two practice questions and mark your answers on the answer sheet.

P5



LM	LP	MQ	LQ	MP
A	**B**	**C**	**D**	**E**

P6

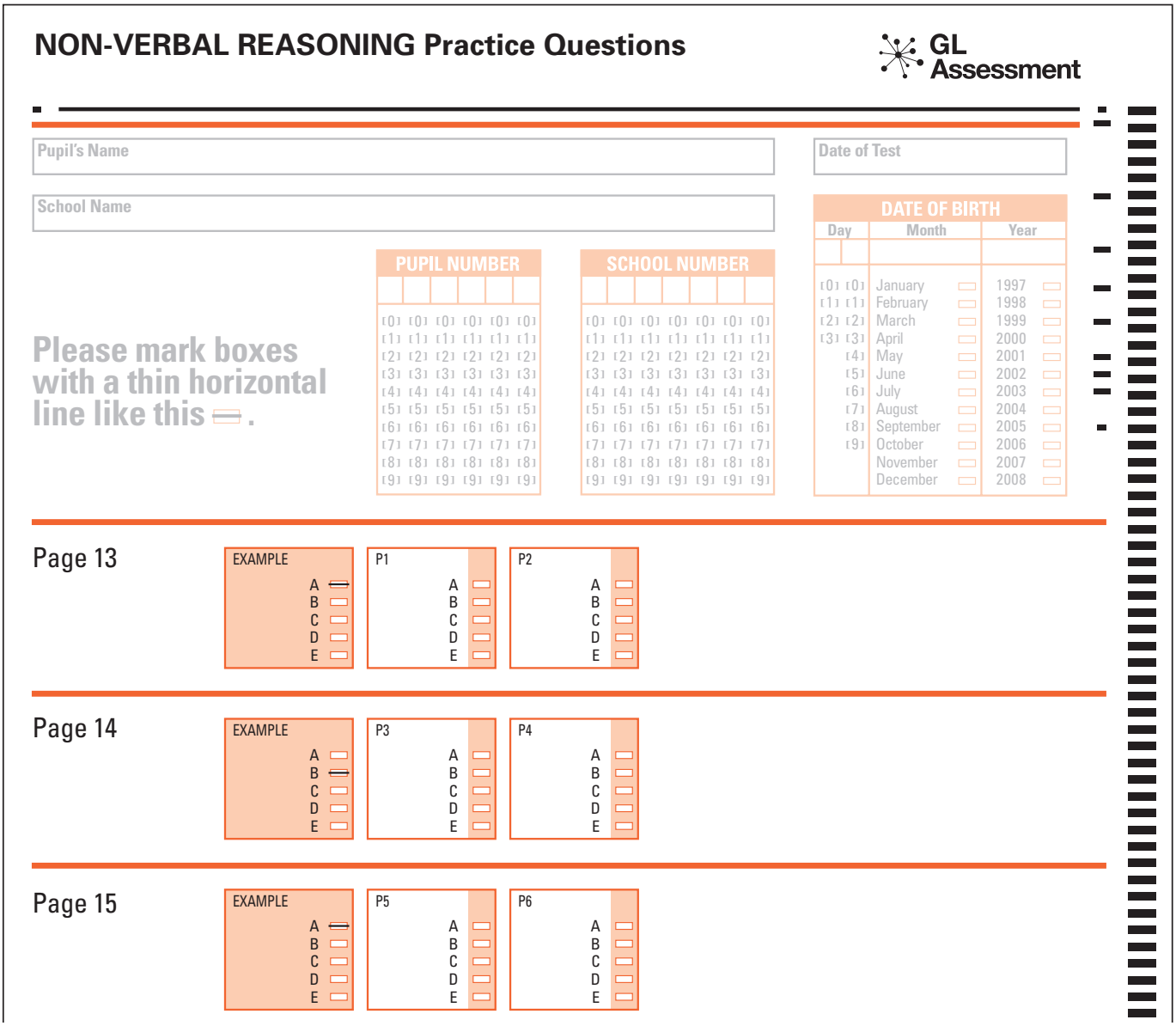


YGL	XHL	XFM	WGN	YHM
A	**B**	**C**	**D**	**E**

Marking your Answers on the Answer Sheet

The real test will be scored by a computer; the computer 'reads' the pencil marks that you make. Answers should be marked clearly in pencil like this ▬, with any mistakes carefully rubbed out (**not** crossed out). You must also make sure that you mark your answer in the box that has the same number as the question in the test booklet.

Sample Answer Sheet



Practice Questions: Answers & Solutions

P1

The answer is **B**. It is the one that is most unlike the other four because the small shape is positioned within the short end of the 'L' shape, whereas in figures A, C, D and E, the small shapes are positioned within the long end of the 'L' shape.

P2

The answer is **E**. The five small rectangles around the centre circle in E follow a different pattern from A–D, making it the most unlike the others. The pattern for E (in a clockwise motion) is: black fill; white circle; line; black circle; white fill. The pattern for A-D (in a clockwise motion) is: black fill; white circle; white fill; black circle; line.

P3

The answer is **D**. Moving from left to right in the top row of the large square on the left, the four small circles in the corners have changed from black to white and the small white diamond in the centre has got larger. If you make the same changes to the bottom row, the three black rectangles change to white rectangles and the small white triangle in the centre gets larger.

P4

The answer is **B**. In the first column of the large square on the left, there are three different shapes (six-sided shape, five-sided shape and a circle), but the one feature they have in common is their fill: vertical stripes. The second column contains the same three shapes but not in the same order – and they are all white. In the third column, all of the shapes are black and there must be one of each shape, which means the blank square is a black five-sided shape.

P5

The answer is **D**. This code has two letters. The first letter is the same for both white shapes, so M must be the code for white and L the code for a black dot. The second letter must determine the shape, as P is the code for circle and Q is the code for hexagon. Therefore the test shape must have an L code for a black dot and a Q code for hexagon. So the correct answer is LQ.

P6

The answer is **B**. This code has three letters. The first letter is the same for both images containing three diagonal lines, so W must be the code for three lines, X the code for two lines and Y the code for four lines. The second letter must be for direction of shape, as both shapes with diagonal lines from bottom-left to top-right have the code F. H is the code for diagonal lines from top-left to bottom-right and G is the code for horizontal lines. The third letter must stand for line type, since both images with solid thin lines have the code N, leaving M the code for a solid thick line and L the code for a dashed line. Therefore the test shape must have an X code for two lines, an H code for diagonal lines top-left to bottom-right and an L code for dashed lines. So the correct answer is XHL.

Spatial Reasoning

About Spatial Reasoning tests

Spatial Reasoning (SR) tests are similar to non-verbal reasoning tests in that they involve reasoning with abstract figures. Spatial reasoning also tests the efficiency of those thinking processes that use mental images of shapes and space. SR question types typically involve the mental creation, retention and manipulation of visual images.

SR ability is critical in many disciplines and careers; for example, mathematics, physics, engineering, dentistry and architecture. It has nonetheless been neglected within most education systems, being misinterpreted as a low-level facility for dealing with things, or 'being good with one's hands'. As a result, individuals with a particular strength in this type of thinking have not always been identified and developed, reducing the pool of talent in vital spatial occupations.

It is now clear that spatial thinking processes constitute one key element of general reasoning ability. Indeed hierarchical models of mental abilities have placed spatial ability on a par with verbal reasoning ability, immediately below general ability.

This guide serves as an introduction to similar types of questions that may be included within an SR test, but not all the question types presented here will necessarily be included in the real test and there will be some additional item types not shown.

The SR tests are multiple-choice, which means there are a number of answer options to choose from for each question. You will mark your choice of answer option on a separate answer sheet for the real tests, but for this introductory guide, a small section of the answer sheet has been reproduced on page 22 for you to practise marking your answers. Correct answers to the practice questions, together with their solutions, are provided on page 23.

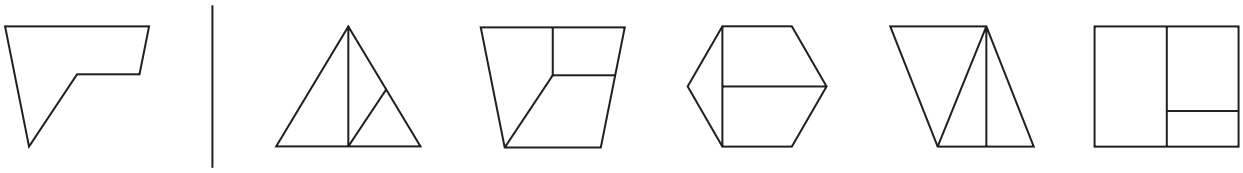
Example and Practice Questions

On the next page are two examples of SR questions, similar to those you could come across in the real test. The example questions have the correct answer marked on the sample answer sheet on page 22 so that you can see how to mark your answers properly. There are further practice questions below each example, so you can practise working them out and marking the answers yourself on the answer sheet.

Hidden Shapes

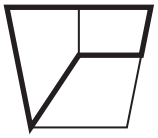
These questions contain hidden shapes. The shape on the left is the target shape. The target shape is hidden in one of the five diagrams to the right of the line. **It is exactly the same size as the target shape, but it may have been rotated (spun round) where it is hidden.** All of the sides of the target shape must be visible in the diagram where it is hiding. Choose which of the five diagrams to the right of the line contains the hidden target shape and **mark its letter on your answer sheet**.

Example



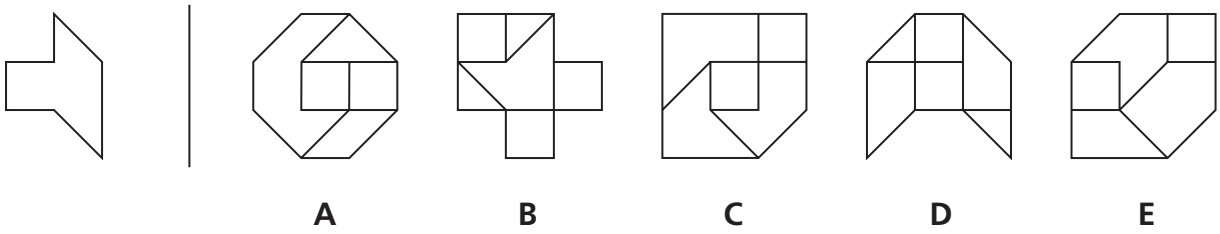
Answer **B**

The hidden target shape is shown in bold below so that you can clearly see the answer is B, and this has been marked on the answer sheet on page 22.



Now try these two practice questions and mark your answers on the answer sheet.

P1



P2

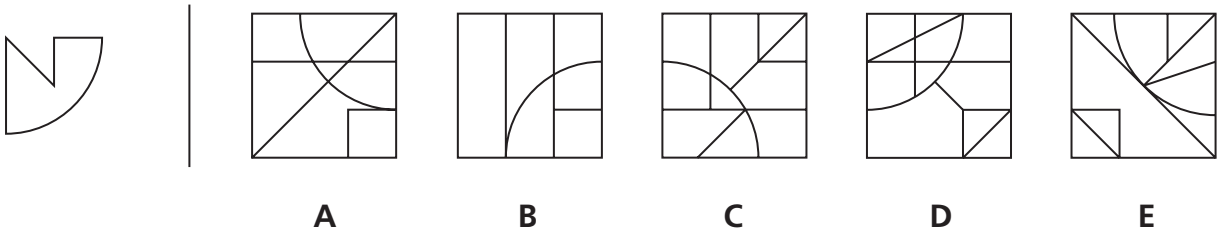
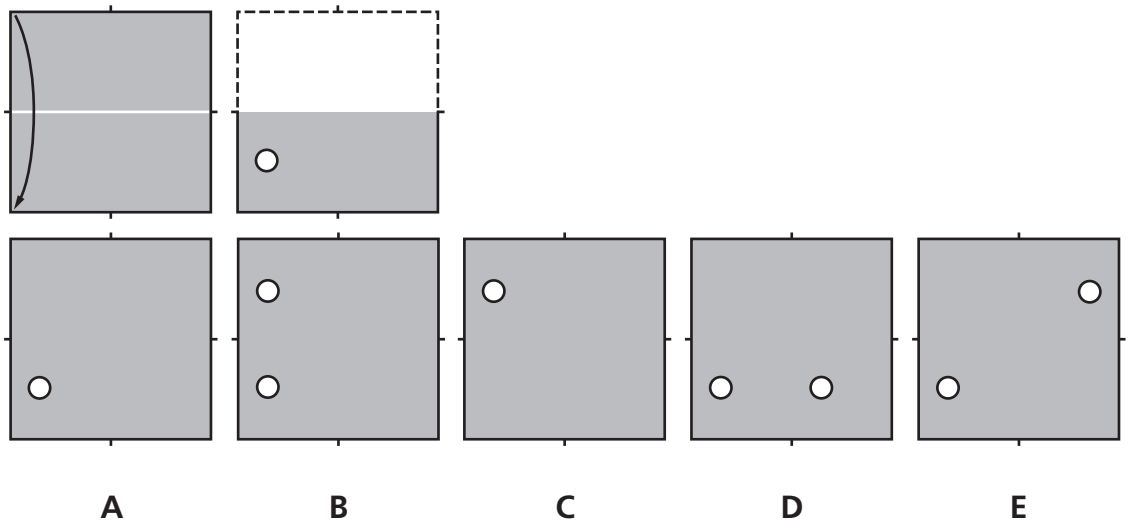


Figure Analysis

These questions are about folding paper and punching holes in it. You must decide how the paper would look when it is unfolded. Choose which of the five squares beneath the folded squares shows how the paper would look when it is unfolded and **mark its letter on your answer sheet**.

Example



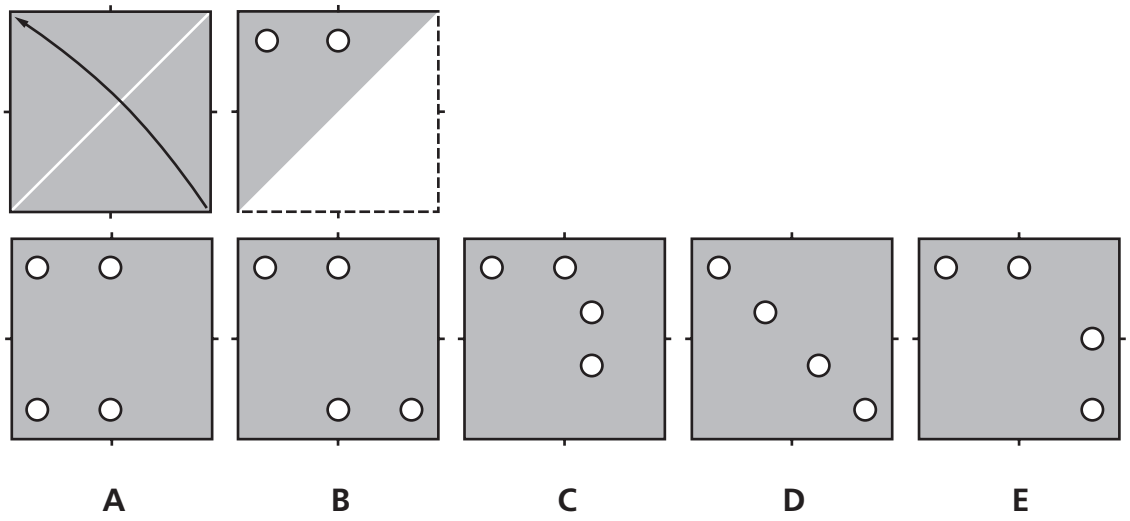
Answer **B**

The two squares at the top show how the paper is folded and punched through. The first square shows the paper at the start. The white line shows the crease and the arrow shows the direction of the fold.

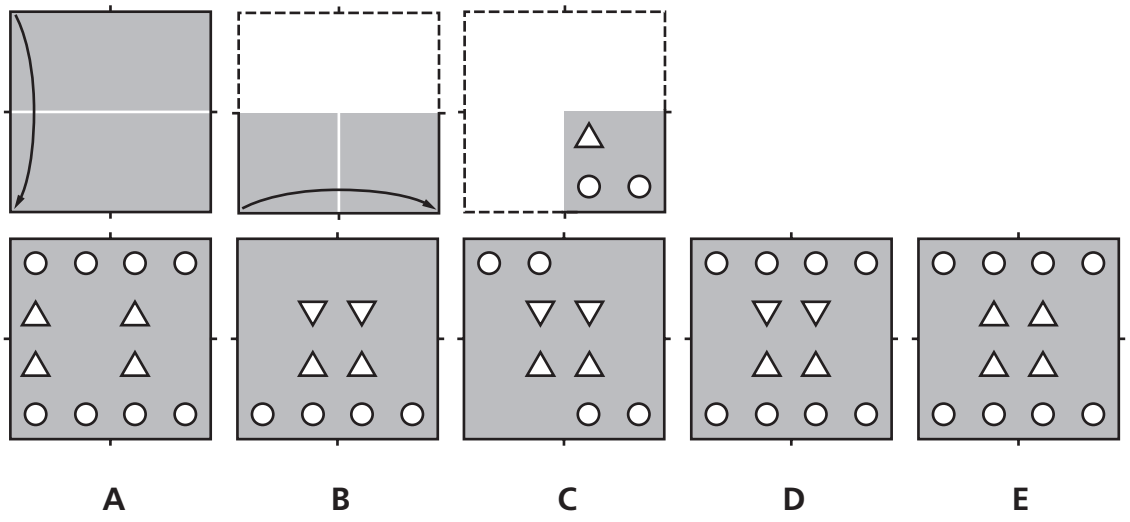
The paper is folded down, so where the paper was before folding is marked by dashed lines. A hole is punched after the fold is made. This is shown by the white circle in the second square. Because the paper is folded over, the hole goes through two layers. When unfolded, there will be two holes, one hole in the top half and one in the bottom half, both on the left-hand side of the paper. The correct answer is option **B** and this has been marked on the answer sheet on page 22.

Now try these two practice questions and mark your answers on the answer sheet.

P3



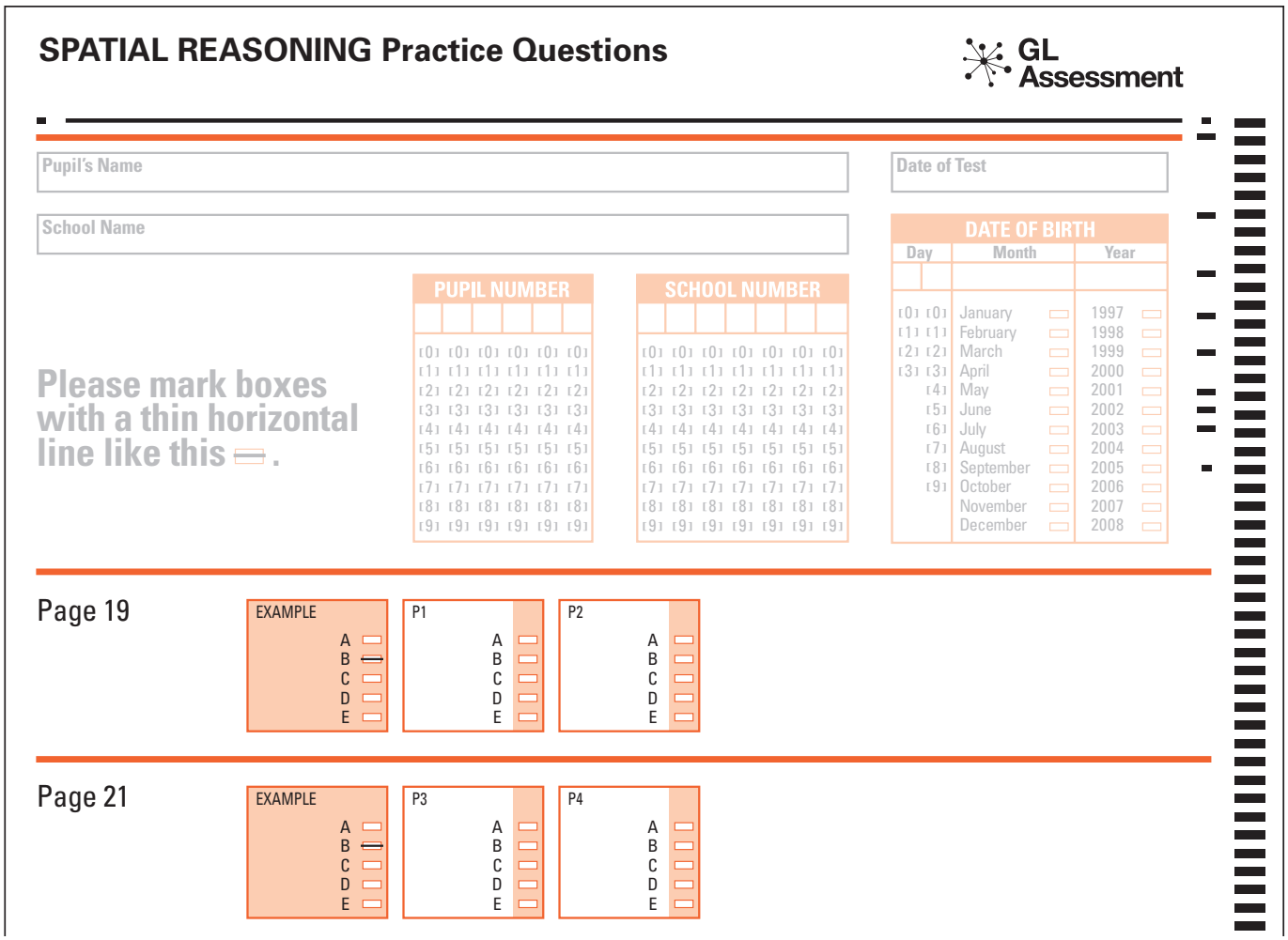
P4



Marking your Answers on the Answer Sheet

The real test will be scored by a computer; the computer 'reads' the pencil marks that you make. Answers should be marked clearly in pencil like this ▬, with any mistakes carefully rubbed out (**not** crossed out). You must also make sure that you mark your answer in the box that has the same number as the question in the test booklet.

Sample Answer Sheet



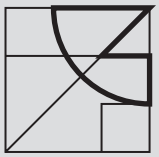
Practice Questions: Answers & Solutions

P1

The answer is **D**. The hidden target shape has been shown in bold below so that you can clearly see it.

P2

The answer is **A**. The hidden target shape has been shown in bold below so that you can clearly see it.



P3

The answer is **E**. The paper was folded over diagonally from bottom to top, as shown in the first square. Two holes have been punched after the paper was folded over, as shown in the second square. The holes have gone through two layers. When unfolded, there will be four holes, one hole in the top-left, one in the top-centre, one in the centre-right and one in the bottom-right, as shown in option **E**.

P4

The answer is **D**. The paper was folded down as shown in the first square. The paper was then folded over again from left to right, as shown in the second square. One triangle (tip pointing up) and two holes have been punched after the paper was folded over, as shown in the third square. The holes have gone through four layers. When unfolded, there will be four holes along the top, four holes along the bottom and four triangles in the centre of the paper (two with tips pointing down and two with tips pointing up), as shown in option **D**.

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