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PRACTICE PAPERS · QUESTION BOOKLETS · MARK SCHEMES & ANSWERS · PAPER NOTES

11+ PRACTICE PACK

GL Assessment Non-Verbal & Maths

11+ Mixed Complete Practice Pack

CONTENTS

Familiarisation Test

Non-Verbal Reasoning & Mathematics

Read the following with your child:

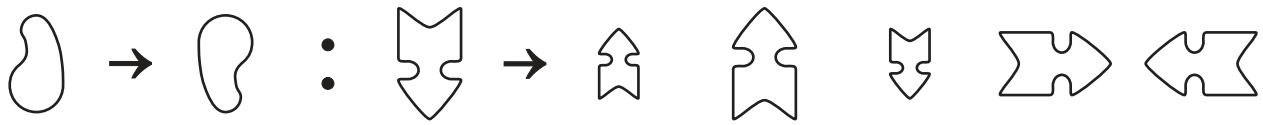
1. This is a multiple-choice test in which you have to mark your answer to each question on the separate answer sheet. You should mark only one answer for each question.
2. Draw a firm line clearly through the rectangle next to your answer, like this  . If you make a mistake, rub it out as completely as you can and put in your new answer.
3. There are three sections in this paper – two for Non-Verbal Reasoning and one for Mathematics. The first two sections start with an explanation of what to do followed by one or two worked examples with the answers already marked on the answer sheet. These sections also contain some practice questions. Solutions to the examples and practice questions are provided.
4. Be sure to keep your place in the correct section on the answer sheet. Mark your answer in the box that has the same number as the question.
5. You may find some of the questions difficult. If you cannot do a question, **do not waste time on it but go on to the next**. If you are not sure of an answer, choose the one you think is best.
6. **Work as quickly and as carefully as you can.**

GL Assessment®

Non-Verbal Reasoning: Section 1

On the left of the example below are two shapes with an arrow between them. Decide how the second is related to the first. After these there is a third shape, then an arrow and then five more shapes. Decide which of the five shapes goes with the **third** one (before the arrow) to **make a pair** like the two on the left. Its letter has been marked on your answer sheet.

Example



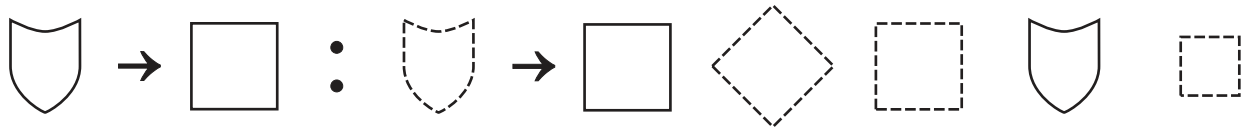
A B C D E

The shape rotates 180° but doesn't change size.

Answer: B

Now do the two practice questions below.
Mark the correct answers on your answer sheet.

P1



A B C D E

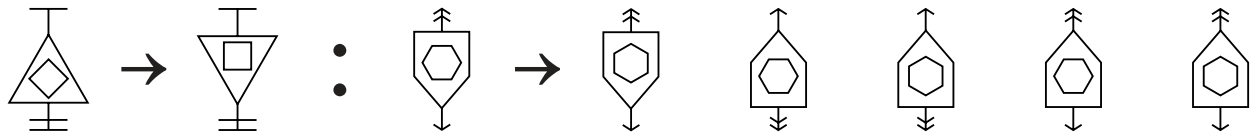
In the two shapes on the left, we can see that the shape changes from a shield to a square but the size remains the same and so does the line style. This means that the dashed shield will change to a dashed square of the same size. This makes **C** the correct answer.

P2

A B C D E

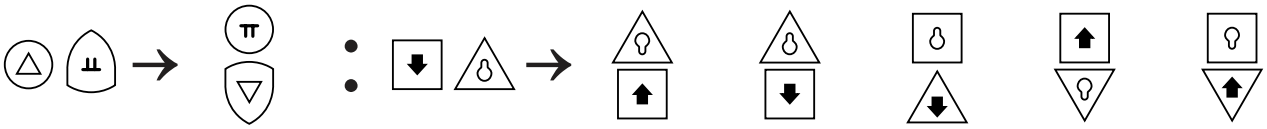
In the two shapes on the left, we can see that the shapes stay the same but there is a reversal of shading. The third shape is a small white 'keyhole' inside a black six-sided figure so shape four must be the same but with reverse shading. Therefore, **A** is the correct answer.

1



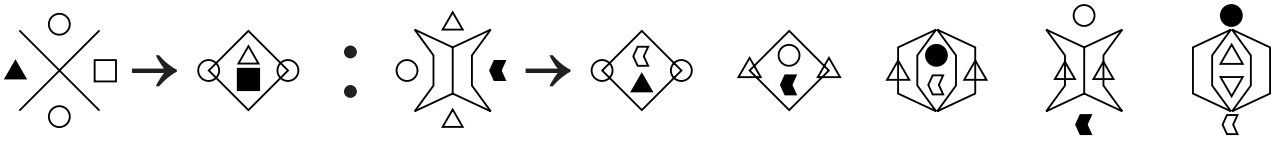
A B C D E

2



A B C D E

3

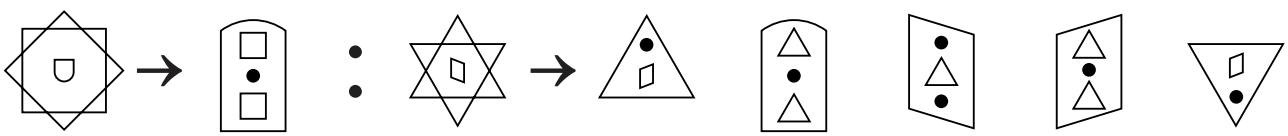


A B C D E

4

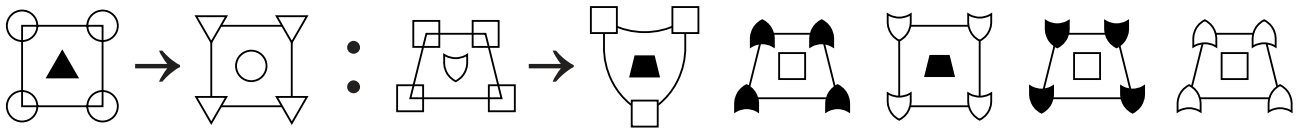
A B C D E

5



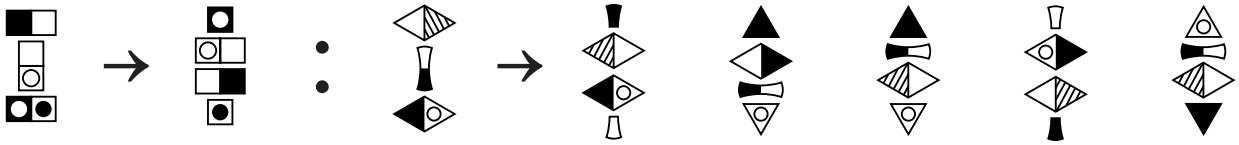
A B C D E

6



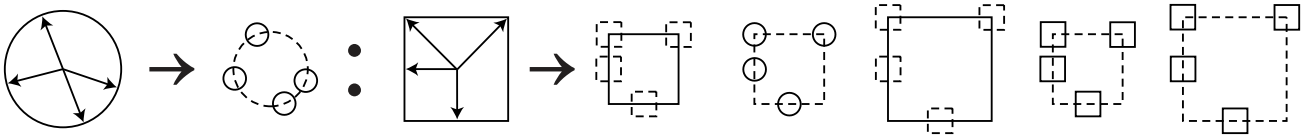
A B C D E

7



A B C D E

8

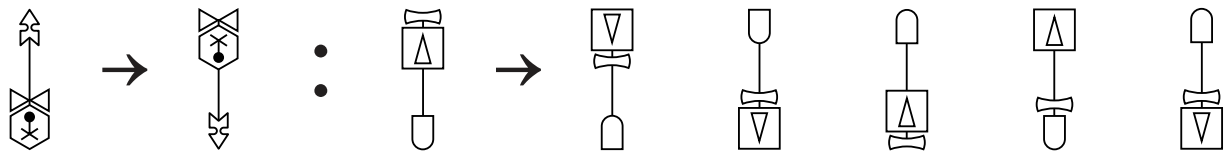


A B C D E

9

A B C D E

10



A B C D E

11

A B C D E

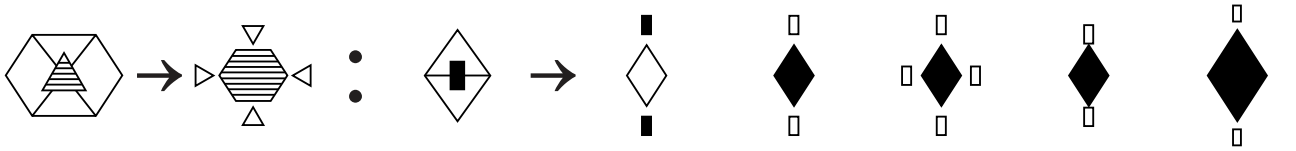
12

A B C D E

13

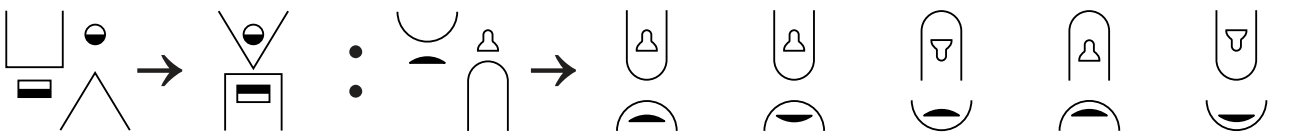
A B C D E

14



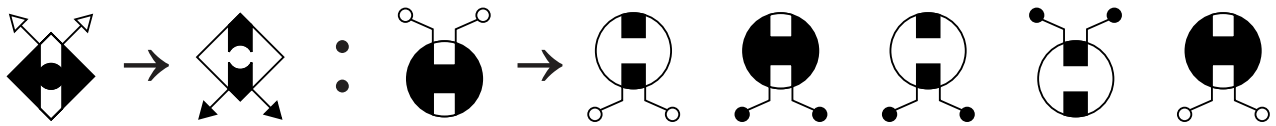
A B C D E

15



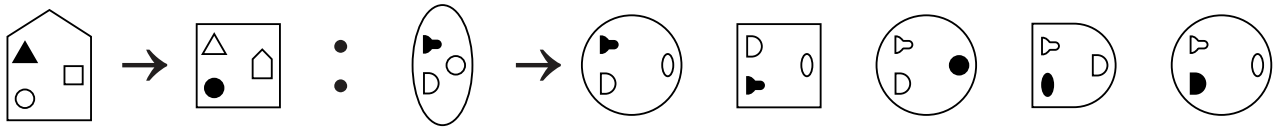
A B C D E

16



A B C D E

17

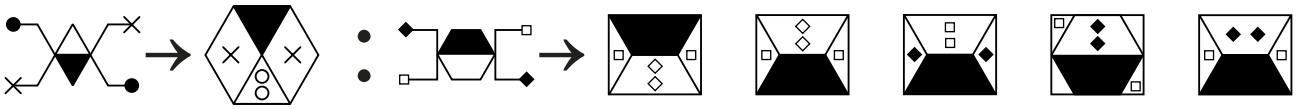


A B C D E

18

A B C D E

19



A B C D E

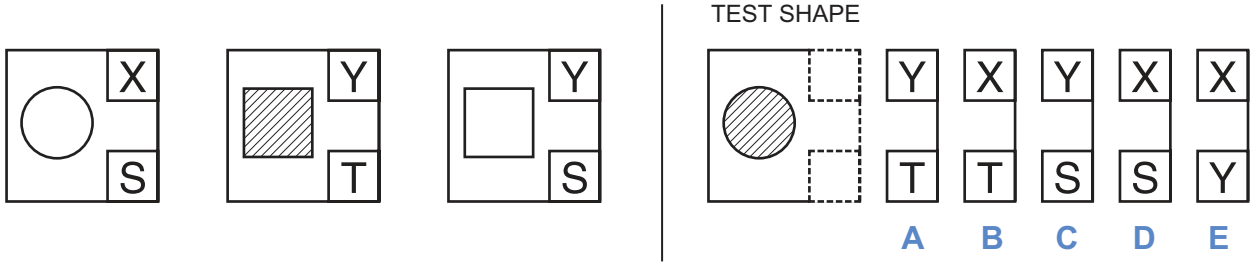
20

A B C D E

Non-Verbal Reasoning: Section 2

To answer these questions you have to work out a code. In the boxes on the left are shapes and the code letters that go with them. The top letters mean something different to the bottom ones. You must decide how the letters go with the shapes. Then find the correct code for the **test shape** from the set of five codes on the right and **mark its letter on your answer sheet**. The examples below have been done for you and the answers have been marked on your answer sheet.

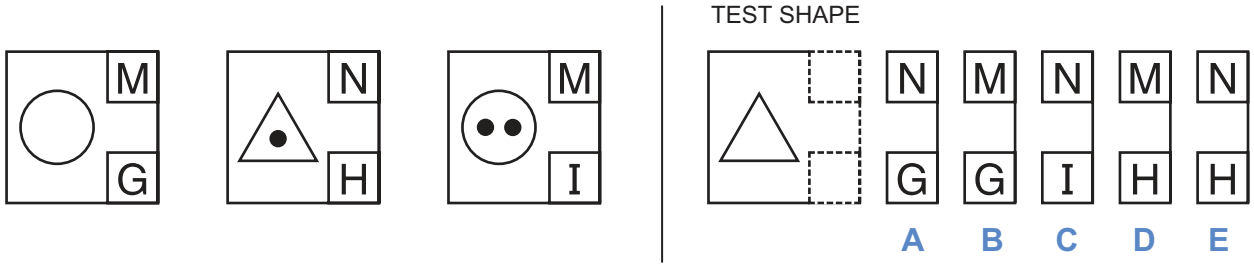
Example 1



Answer: B

In the example above, both squares have a Y at the top but the circle has an X, so the top code must be for shape. Both white shapes have an S at the bottom, but the shaded shape has a T, so the bottom code must be for shading. The test shape is a shaded circle so its code letters must be X for circle and T for shading, and **B** has been marked on your answer sheet. Now look at the second example:

Example 2



Answer: A

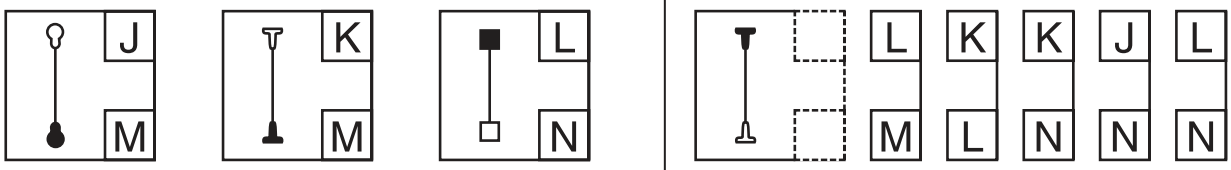
Both circles have an M at the top but the triangle has an N, so the top code must be for shape. The bottom code letter is different for each shape so G, H and I must be the codes for no dot, one dot and two dots. The test shape is a triangle with no dots so its code letters must be N for triangle and G for no dots, and **A** has been marked on your answer sheet.

Now do the practice question below and mark the correct answer on your answer sheet. **Remember, there is a new code for each question.**

P1

Both six-sided shapes have an R at the top and both four-sided shapes have an S, so the top code must be for the shape. The bottom codes show that both shapes with diagonal lines have an F, the unshaded shape a G and the shaded shape an H, so the bottom codes must be for the shading. The test shape is six-sided and unshaded so its code letters must be R for shape and G for shading, so **E** is the correct answer.

21



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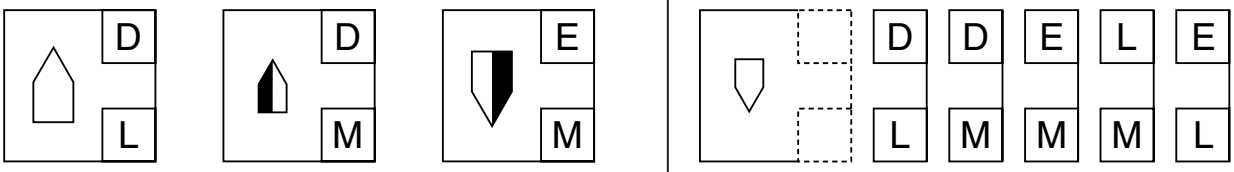

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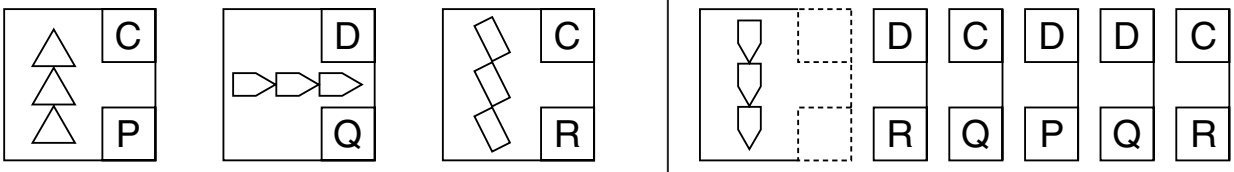

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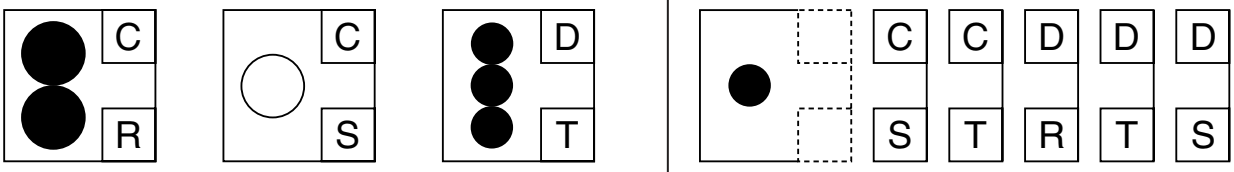

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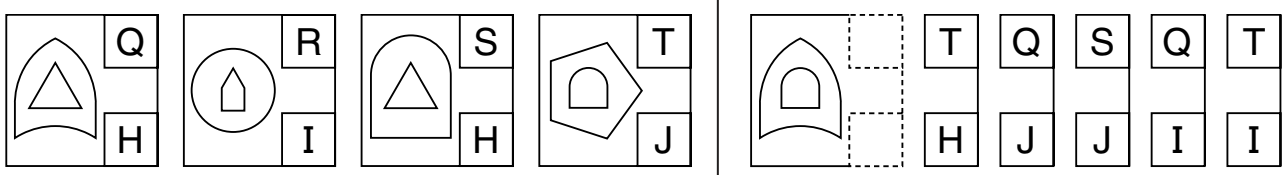

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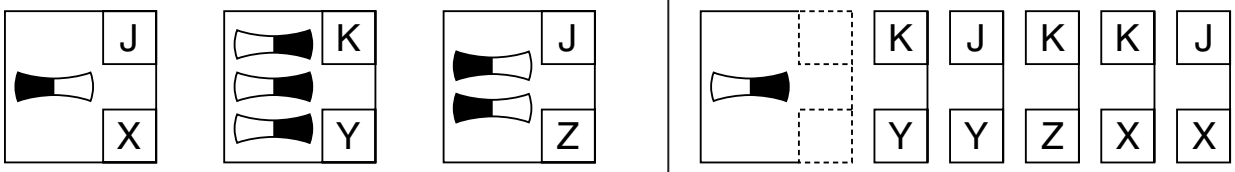

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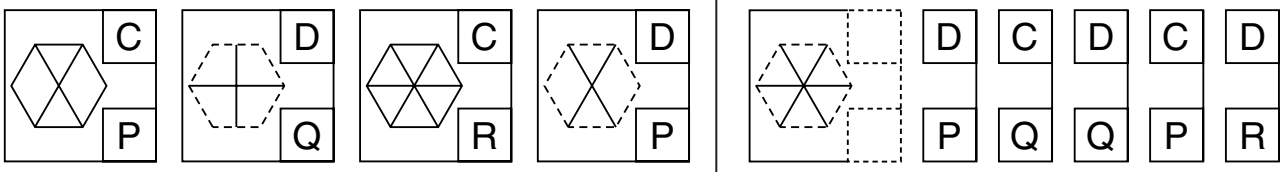

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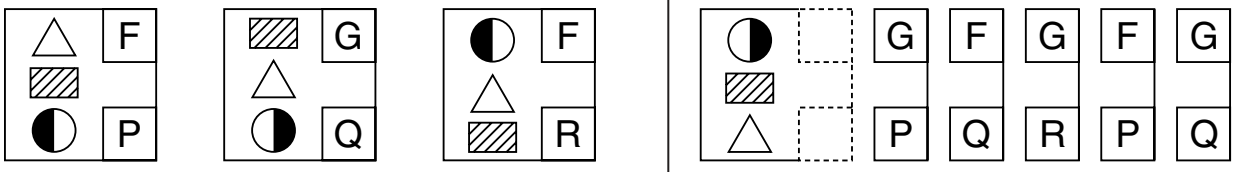

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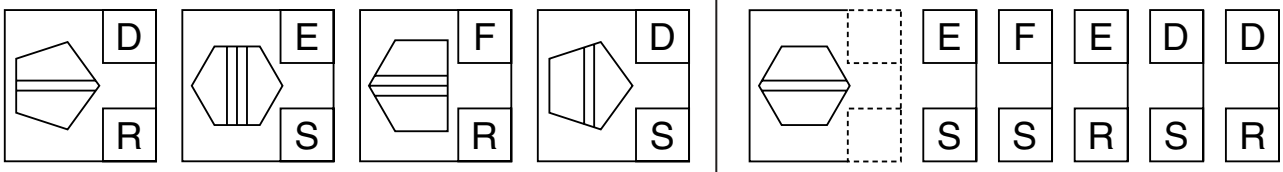

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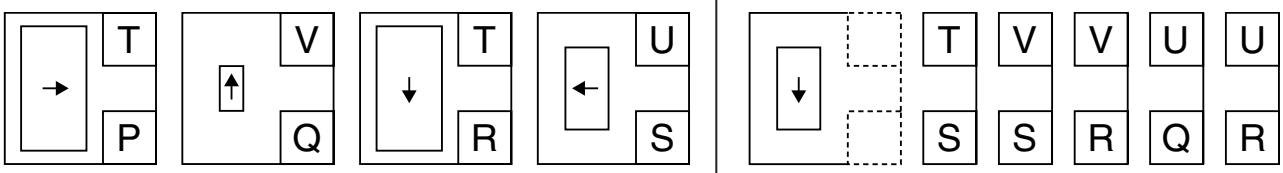
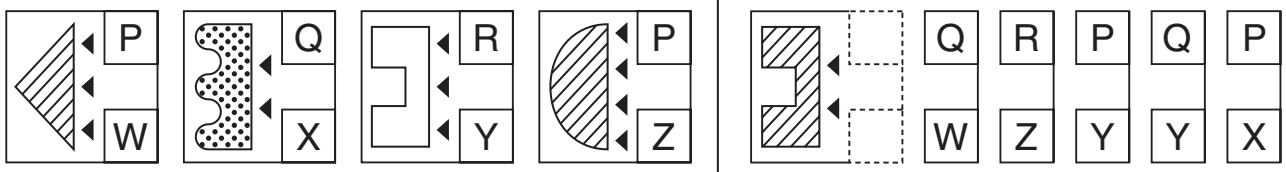
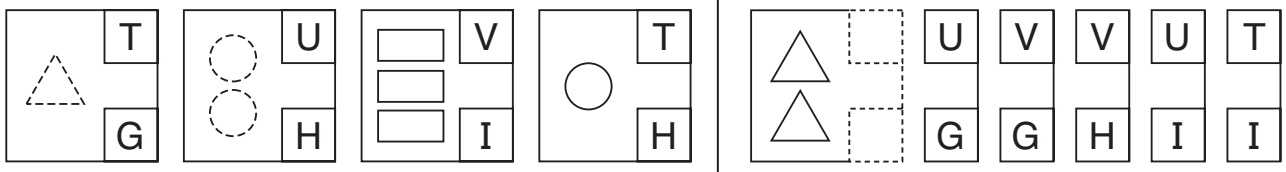


31



32



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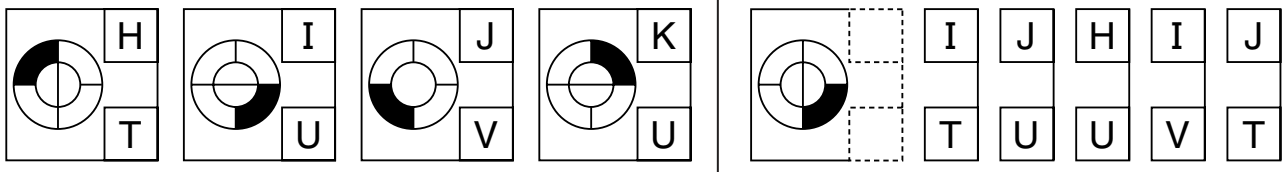

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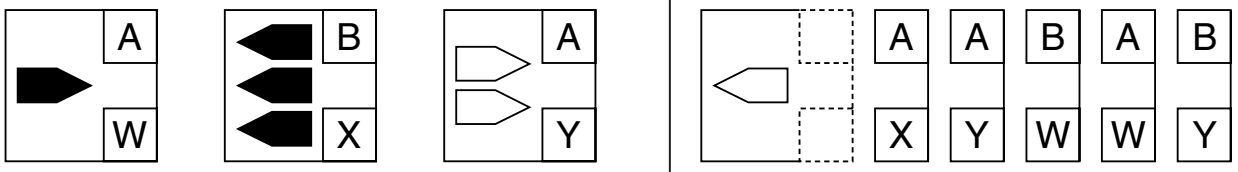

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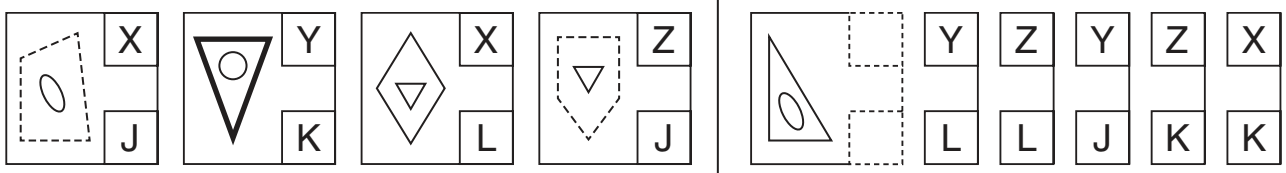

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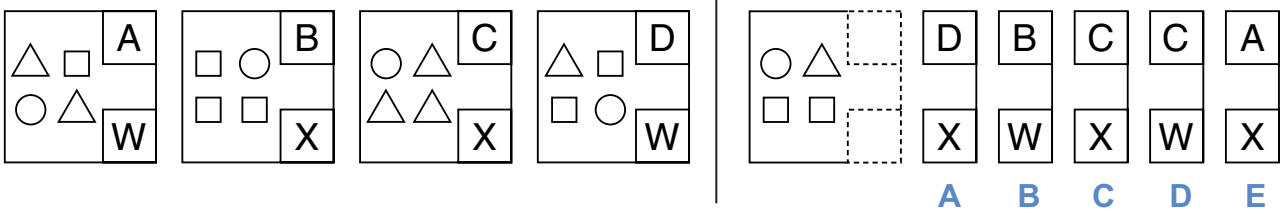

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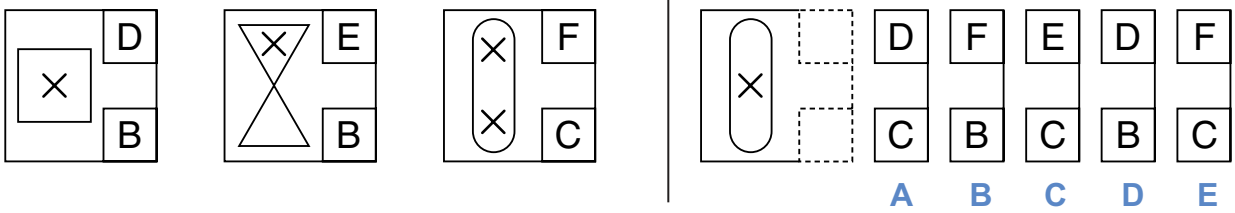

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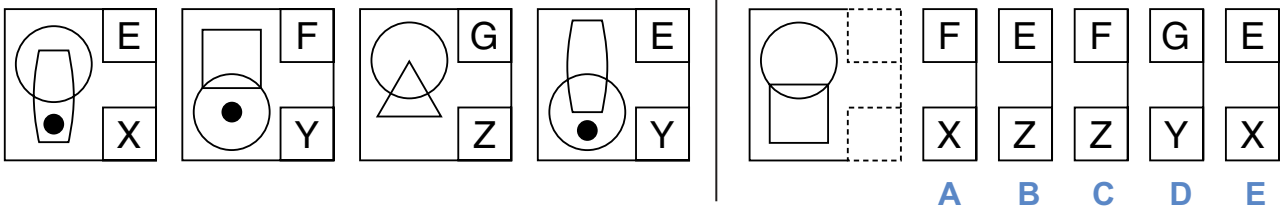

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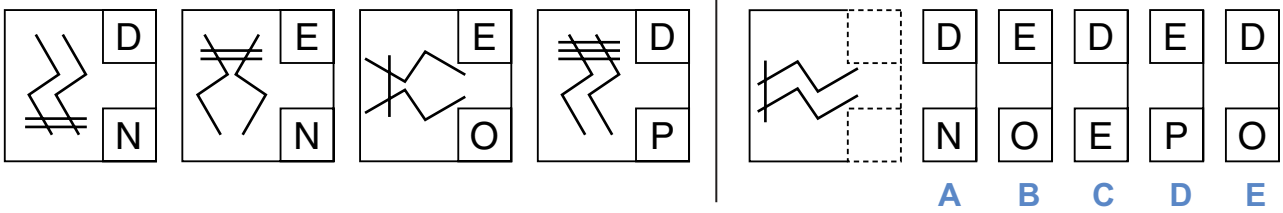

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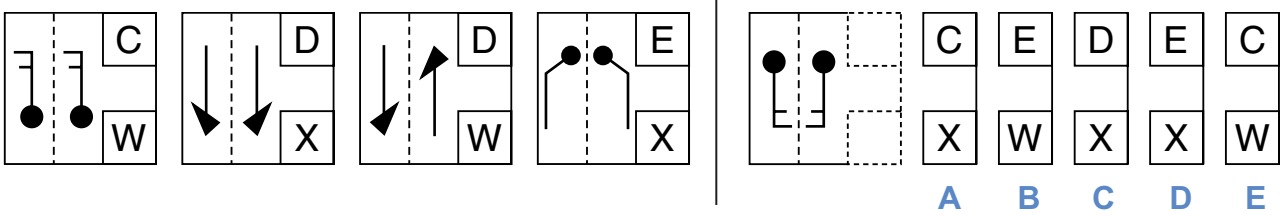


41

 stands for 12 ships.

Look at this table.

Dock	Number of Ships
A	
B	
C	

How many more ships are in dock A than dock C?

A 0.5 **B** 1 **C** 3 **D** 4 **E** 6

42

What is the value of the 7 in this number?

7240

A 7 thousands
B 7 hundreds
C 7 tens
D 7 ones
E 7 thousandths

43

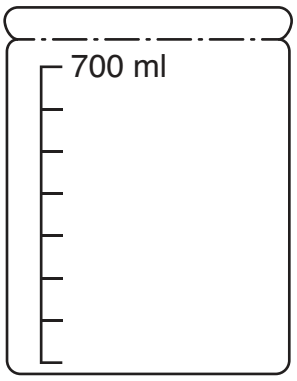
Iveta was 1.43 metres tall.
She grew 2 centimetres more.

How tall was she then in metres?

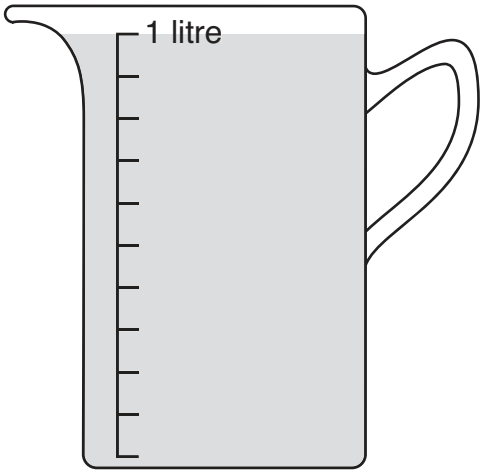
A 1.45 m **B** 1.63 m **C** 1.65 m **D** 1.405 m **E** 1.603 m

44

An empty jar = 700 millilitres



A jug holding 1 litre of water



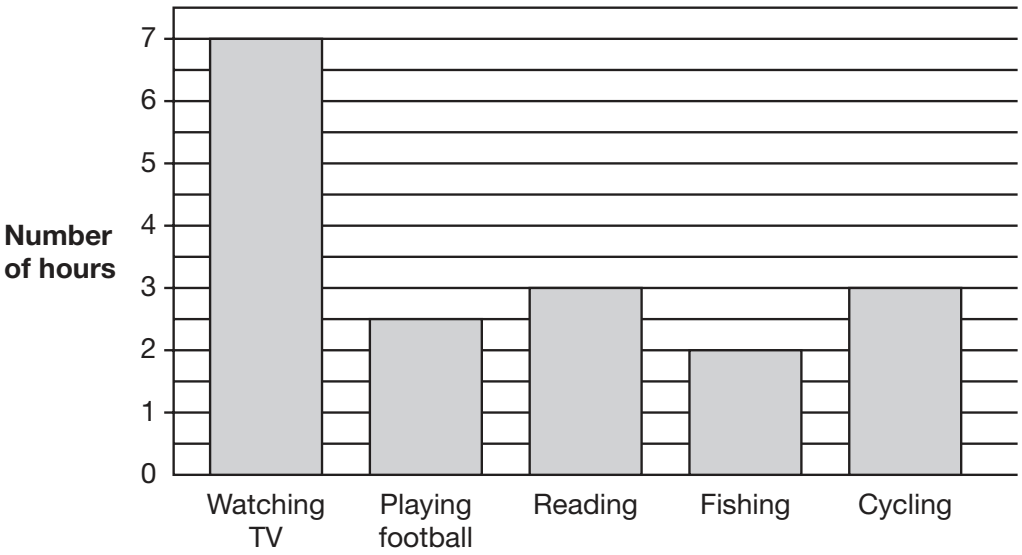
The jug holds 1 litre of water.
The jar is **filled** from the jug.

How much water will be left in the jug?

A 0.3 litres **B** 0.25 litres **C** 400 millilitres **D** 0.35 litres **E** 200 millilitres

45

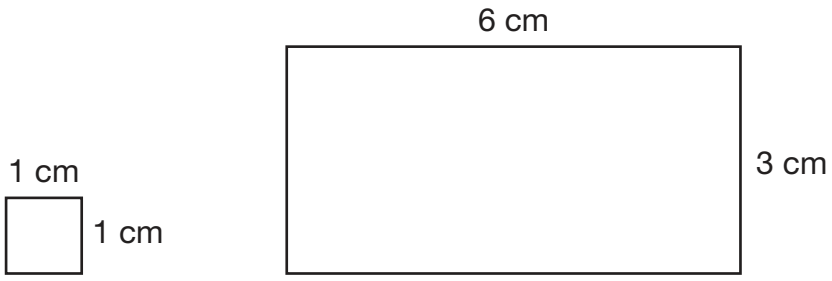
This chart shows how Kai spent his spare time last week.



How many hours did he spend out of doors?
(playing football, fishing and cycling)

A 6.5 hours **B** 7 hours **C** 7.5 hours **D** 8 hours **E** 8.5 hours

46



How many small squares will fit into the large rectangle?

A 12 **B** 15 **C** 18 **D** 21 **E** 24

47

Which of these digital alarm clocks shows that it is quarter past seven in the evening?

A 7:15

B 7:25

C 19:25

D 19:15

E 21:15

48

Join Heritage today! Take advantage of this great offer now.

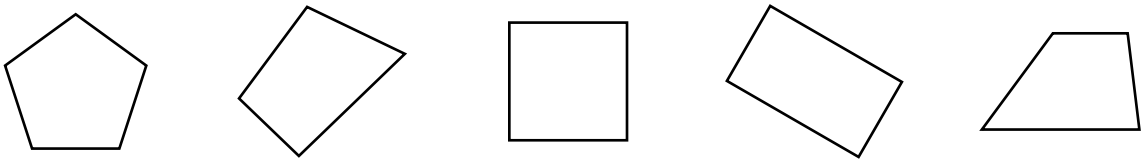
Type of membership	Normal price	Offer price
Individual member	~~£47.90~~	£35.63
Joint membership (2 adults)	~~£79.50~~	£59.63
Family group (2 adults and children under 18)	~~£82.00~~	£61.50
Family one adult (1 adult and children under 18)	~~£62.00~~	£46.50
Young person – aged 13–25	~~£21.50~~	£16.13

Mrs Ward wants to join Heritage with her three children, aged 10, 12 and 15.

How much must she pay?

A £82.00 **B** £62.63 **C** £62.00 **D** £61.50 **E** £46.50

49



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

Which of these is NOT a quadrilateral?

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

50

Here is part of a train timetable.

Purley	. . . .	. . . .	. . . .	23:21	. . . .
East Croydon	22:56	23:01	23:10	23:27	23:30
Norwood Junc.	. . . .	. . . .	. . . .	. . . .	. . . .
London Bridge	. . . .	. . . .	. . . .	. . . .	. . . .
Clapham Junc.	23:07	23:13	23:21	23:37	23:40
Victoria	23:12	23:18	23:27	23:43	23:45

A train leaves East Croydon at 23:27.

How long does it take to get to Victoria?

A 6 minutes **B** 10 minutes **C** 13 minutes **D** 16 minutes **E** 26 minutes

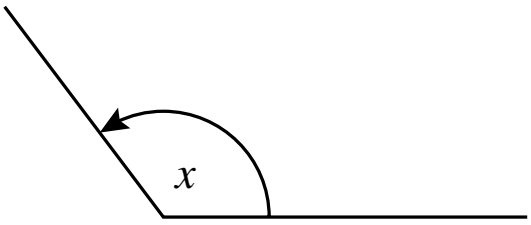
51

What percentage of £5 is 50p?

A 1% **B** 5% **C** 10% **D** 20% **E** 50%

52

Look at this angle.



Which of the following statements is correct?

A Angle x is less than 90 degrees.
B Angle x is a right angle.
C Angle x is more than 180 degrees.
D Angle x is between 90 and 180 degrees.
E Angle x is 180 degrees.

53

105 ÷ ▽ = 21

What number does ▽ stand for?

A 4 **B** 5 **C** 6 **D** 7 **E** 15

54

A swimming pool charges £3.60 for entry.

You can save $\frac{1}{3}$ of the entry fee with a membership card.

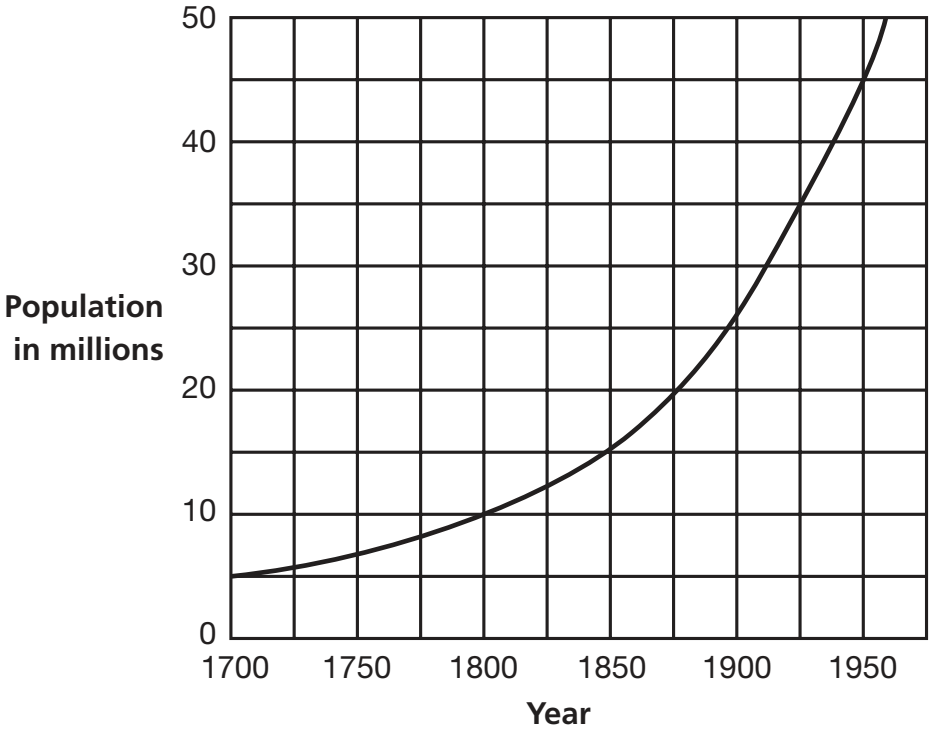
On his first visit, Ken spends £5 on a membership card plus the reduced entry fee.

How many times does Ken visit before he gets back his £5?

A 4 **B** 2 **C** 5 **D** 1 **E** 3

55

The graph shows the population of Britain from 1700.



In which year was the population twice as much as it was in 1800?

A 1850 **B** 1875 **C** 1895 **D** 1900 **E** 1910

56

9 36 81

The three numbers above are alike in some ways.

Select ONE of the following to say one way in which they are alike.

A They are all even numbers.
B They are all two-figure numbers.
C They are all prime numbers.
D They are all square numbers.
E They can all be divided by 2 without a remainder.

57

Mateo's temperature is 37.5°C.
When he was ill it rose 3°C.

What was his temperature when he was ill?

A 37.8°C **B** 47.5°C **C** 34.5°C **D** 37.2°C **E** 40.5°C

58

Ava had 5 boxes.
Each box weighed 800 grams.

How many KILOGRAMS was this altogether?

A 4 kg **B** 4.5 kg **C** 40 kg **D** 4000 kg **E** 4500 kg

59

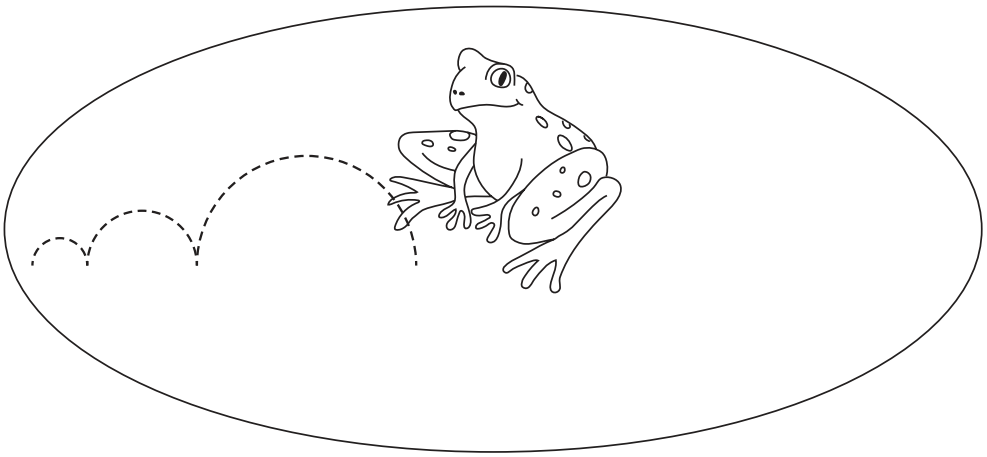
What is 3^2 ?

A 5 **B** 6 **C** 9 **D** 18 **E** 27

60 **Work out XXVI multiplied by XLI.**

A CMLXXXIV
B MLXVI
C DCCCLXXXIV
D MCDLXIV
E MDLXXXVI

61 A frog starts jumping from the middle of a circular pond.
The pond is 12 metres across, from one side to the other.
The frog starts jumping towards the edge of the pond.
Each jump is in the same direction.



Each jump halves his distance from the edge of the pond.

How far is the frog from the edge after three jumps?

A 10.5 m **B** 75 cm **C** 150 cm **D** 5.25 m **E** 125 cm

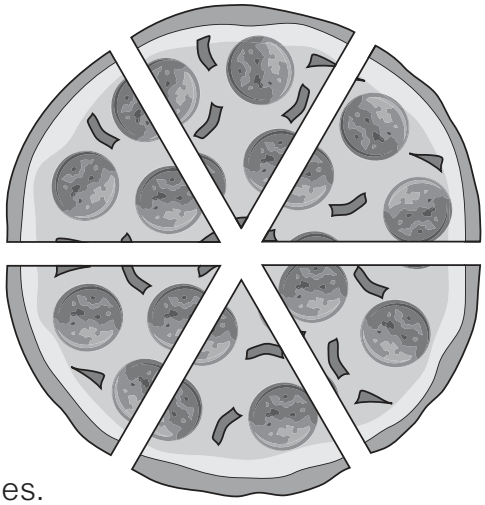
62 **Put the correct number in the box**

$27 \times 99 = 2700 - \square$

A 27 **B** 37 **C** 127 **D** 137 **E** 687

63

Ali and his sister share a pizza cut into six equal pieces.



Ali eats $\frac{1}{3}$ of all the pieces.
His sister eats $\frac{1}{4}$ of the remaining pieces.

After both Ali and his sister have eaten, what fraction of the pizza is left?

A $\frac{5}{12}$ **B** $\frac{1}{2}$ **C** $\frac{1}{4}$ **D** $\frac{1}{12}$ **E** $\frac{1}{6}$

64

Instructions for roasting meat:
Cook for 30 minutes at 230 °C.
Turn down the heat to 180 °C.
Allow 30 minutes cooking time for every 450 g.

A piece of meat takes $2\frac{1}{2}$ hours altogether to cook.

How heavy is it?

A 2.25 kg **B** 1.25 kg **C** 1.8 kg **D** 2.7 kg **E** 1.35 kg

65

To make brown paint, you mix 2 parts red, 17 parts yellow and 1 part blue.

How much red paint is needed to make 40 litres of brown paint?

A 20 litres
B 34 litres
C 1.5 litres
D 4 litres
E 2 litres

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GL Assessment®

Paper Notes: 11+ Mixed Question Booklet (Non-Verbal & Maths)

Compiled by SATs-Papers.co.uk to help you get the most from this paper.

Overview

This is a **familiarisation test** published by **GL Assessment**, designed to prepare students for the **11-Plus entrance examination**. It combines two distinct disciplines: **Non-Verbal Reasoning** (Sections 1 and 2) and **Mathematics** (Section 3), offering a total of **65 multiple-choice questions**.

The non-verbal reasoning sections test pattern recognition, spatial reasoning, and logical deduction through shape manipulation and code-breaking puzzles. Students must identify transformations (rotation, reflection, shading changes) and decode letter-based systems that map to shape properties. Section 1 focuses on shape relationships, while Section 2 introduces coding questions where students must infer rules from examples.

The mathematics section covers a broad curriculum: pictograms and data interpretation, place value, metric conversions, fractions, percentages, timetables, area and perimeter, Roman numerals, and multi-step word problems. Questions range from straightforward arithmetic to more complex reasoning challenges involving ratios and real-world contexts. This paper suits pupils in Year 6 preparing for grammar school or independent school entrance exams, and it serves equally well for diagnostic assessment or timed practice under exam conditions.

How this paper is organised

The paper is divided into **three distinct sections**. Section 1 (Non-Verbal Reasoning) contains **20 questions** on shape analogies: students must identify how two shapes relate and apply the same transformation to a third shape. Each question offers five answer options labelled A to E. Section 2 (Non-Verbal Reasoning) comprises **20 coding questions**; students decode two-letter labels that describe shape properties (e.g. shape type, shading, line style) and select the correct code for a test shape.

Section 3 (Mathematics) contains **25 questions** spanning number operations, measurement, geometry, data handling, and problem-solving. Questions include pictograms, place value, metric units (litres, grams, metres), fractions and percentages, timetables, area, angles, Roman numerals, and multi-step word problems. The paper does not specify a formal time limit in the student instructions, though typical 11-Plus practice suggests 50 to 60 minutes total.

Each section begins with **worked examples** and **practice questions** (labelled P1, P2) that include detailed explanations. Students record answers on a separate answer sheet by drawing a line through the chosen rectangle. The layout is clear and uncluttered, with one or two questions per page and ample white space around diagrams and text.

Topics covered

- Shape analogies and transformations: identifying rotation (including 180° turns), reflection, size scaling, and shading reversals in abstract figures
- Code-breaking with two-letter systems: decoding top and bottom letters that map independently to shape properties such as type, shading, line style, or internal features (dots, arrows)
- Pictograms and data interpretation: reading scales where one symbol represents multiple units and performing subtraction to compare quantities
- Place value in whole numbers and decimals: recognising the value of digits in thousands, hundreds, and decimal places
- Metric conversions and addition: converting centimetres to metres, millilitres to litres, and grams to kilograms, then performing operations in mixed units
- Bar charts and line graphs: extracting data from axes, summing categories, and identifying trends or specific values (e.g. population over time)
- Area and spatial reasoning: calculating how many small squares fit into a rectangle, and understanding area as repeated units
- Time and timetables: reading 24-hour clock times, calculating journey durations, and converting digital clock displays to analogue descriptions (e.g. quarter past seven in the evening)
- Fractions, percentages, and ratio: finding fractions of amounts, converting fractions to percentages, solving ratio problems (e.g. mixing paint in given proportions)
- Real-world problem-solving: membership pricing with discounts, cost breakeven analysis, cooking instructions with time and weight conversions, and division to find missing factors
- Geometry: classifying quadrilaterals, estimating angles (acute, obtuse, right), and recognising perpendiculars and parallel lines
- Roman numerals and multiplication: translating Roman numerals to Hindu-Arabic form, performing arithmetic, and converting results back
- Powers and square numbers: evaluating expressions like 3^2 and identifying properties shared by square numbers (9, 36, 81)
- Multi-step word problems involving halving distances, working backwards from totals, and logical sequencing of operations

How to use this paper for revision

- Practise the worked examples in each section until you can explain the reasoning aloud without looking at the solution; this builds confidence and helps you recognise patterns faster under timed conditions.
- For shape analogies, always check rotation, reflection, size, and shading separately. Make a mental checklist and tick off each property to avoid missing subtle changes.
- In coding questions, write down what you know after examining the first two or three shapes. Label top letters and bottom letters with their meanings (e.g. 'top = shape, bottom = shading') before tackling the test shape.
- When working with metric conversions, write down the conversion factor (1 litre = 1000 ml, 1 kg = 1000 g, 1 m = 100 cm) at the top of your rough paper so you can refer to it quickly.
- For multi-step word problems, underline or highlight the question being asked. Work backwards from the final answer or break the problem into smaller steps, writing each intermediate result clearly.
- Use the answer options to check your working. If your answer is not among A to E, re-read the question to see whether you have used the correct units or operation.
- Time yourself on each section separately at first. Aim for roughly 20 minutes per section (Non-Verbal 1, Non-Verbal 2, Maths), then gradually reduce your target time as you become more fluent.

Common mistakes to avoid

- Confusing rotation with reflection: students often flip shapes horizontally or vertically when the question requires a 180° rotation. Always visualise the centre point and turn the shape around it.
- Mixing up top and bottom codes: in Section 2, students sometimes swap the order of letters or forget which code (top or bottom) refers to which property. Re-check the worked examples if you lose track.
- Reading pictogram scales incorrectly: if one symbol represents 12 ships, half a symbol is 6 ships, not 1 ship. Count symbols carefully and multiply by the key value.
- Forgetting to convert units before calculating: adding 2 cm to 1.43 m without converting to a common unit (either 143 cm + 2 cm = 145 cm = 1.45 m, or 1.43 m + 0.02 m = 1.45 m).
- Misinterpreting 24-hour clock times: 19:15 is 7:15 pm (evening), not 7:15 am. Subtract 12 from hours ≥ 13 to convert to 12-hour format, and remember 'quarter past seven in the evening' means pm.
- Assuming all five-sided or four-sided shapes are identical: quadrilaterals include squares, rectangles, parallelograms, and trapeziums. A pentagon (five sides) is not a quadrilateral.

Exam technique

Start each section by reading the instructions and worked examples, even if you have seen them before; GL Assessment papers sometimes vary slightly in format. Attempt the practice questions (P1, P2) to confirm you understand the method, then move swiftly into the main questions. **Answer every question**: there is no negative marking, so an educated guess is always better than leaving a blank.

In Section 1 (shape analogies), spend a few seconds identifying the transformation before looking at the answer options. This prevents you from being misled by distractors. In Section 2 (coding), write a brief note ('top = shape, bottom = dots') to keep track of the code. If a question takes more than 60 seconds, circle the number, make your best guess, and return to it at the end if time permits.

For the mathematics section, skim the question to identify whether it is a quick recall problem (place value, percentage) or a multi-step word problem. Tackle the shorter questions first to build momentum and secure easy marks. For wordy problems, underline key numbers and the final question. Use rough paper to show your working: examiners cannot award marks for correct method on a multiple-choice paper, but clear working helps you spot errors and makes it easier to check your answer against

the options. If you finish early, revisit any circled questions and double-check conversions (units, Roman numerals) where mistakes are common.

What to revise alongside this paper

Before attempting this paper, ensure you are confident with the **four operations** (addition, subtraction, multiplication, division) up to and including decimals, and revise **metric units** (converting mm, cm, m, km; ml, l; g, kg). Practise reading **analogue and digital clocks** in both 12-hour and 24-hour formats, and work through examples of **bar charts, line graphs, and pictograms** until you can extract and compare data fluently.

For non-verbal reasoning, complete additional sets of **shape analogy** and **coding puzzles** from Bond, CGP, or other GL Assessment familiarisation packs. Focus on recognising compound transformations (e.g. rotation plus shading change) and multi-attribute codes (three or four letters). If you find the reasoning sections challenging, use Venn diagrams or annotated sketches to organise your thoughts.

After mastering this paper, progress to harder material that includes **algebra** (simple equations, sequences), **coordinate geometry**, and more complex **ratio and proportion** problems. Practise under timed conditions and review your errors systematically: for each mistake, write down the correct method and redo a similar question the next day. This spaced repetition cements understanding and builds exam fluency.

Key terms

> **Rotation**, **Reflection**, **Shading**, **Analogy**, **Code**, **Transformation**, **Pictogram**, **Place value**, **Metric conversion**, **Timetable**, **Quadrilateral**, **Acute angle**, **Obtuse angle**, **Roman numerals**, **Square number**, **Ratio**, **Percentage**, **Fraction**, **Area**

FAMILIARISATION ANSWER SHEET – NON-VERBAL REASONING & MATHS

GL Assessment

Candidate's Name

School Name

DATE OF TEST

Day		Month		Year	

CANDIDATE NUMBER

SCHOOL NUMBER

DATE OF BIRTH

Day		Month		Year	

Please mark boxes with a thin horizontal line like this ▬.

NON-VERBAL REASONING - SECTION 1

EXAMPLE

A
B ▬
C
D
E

P1

A
B
C
D
E

P2

A
B
C
D
E

1	2	3	4	5	6	7
A	A	A	A	A	A	A
B	B	B	B	B	B	B
C	C	C	C	C	C	C
D	D	D	D	D	D	D
E	E	E	E	E	E	E

8	9	10	11	12	13	14
A	A	A	A	A	A	A
B	B	B	B	B	B	B
C	C	C	C	C	C	C
D	D	D	D	D	D	D
E	E	E	E	E	E	E

15	16	17	18	19	20
A	A	A	A	A	A
B	B	B	B	B	B
C	C	C	C	C	C
D	D	D	D	D	D
E	E	E	E	E	E

NON-VERBAL REASONING - SECTION 2

EXAMPLE 1

A
B ▬
C
D
E

EXAMPLE 2

A ▬
B
C
D
E

P1

A
B
C
D
E

21	22	23	24	25	26	27
A	A	A	A	A	A	A
B	B	B	B	B	B	B
C	C	C	C	C	C	C
D	D	D	D	D	D	D
E	E	E	E	E	E	E

28	29	30	31	32	33	34
A	A	A	A	A	A	A
B	B	B	B	B	B	B
C	C	C	C	C	C	C
D	D	D	D	D	D	D
E	E	E	E	E	E	E

35	36	37	38	39	40
A	A	A	A	A	A
B	B	B	B	B	B
C	C	C	C	C	C
D	D	D	D	D	D
E	E	E	E	E	E

PLEASE TURN OVER

Please mark boxes with a thin horizontal line like this ▬.

MATHEMATICS

41

- 0.5
- 1
- 3
- 4
- 6

42

- 7 thousands
- 7 hundreds
- 7 tens
- 7 ones
- 7 thousandths

43

- 1.45 m
- 1.63 m
- 1.65 m
- 1.405 m
- 1.603 m

44

- 0.3 litres
- 0.25 litres
- 400 millilitres
- 0.35 litres
- 200 millilitres

45

- 6.5 hours
- 7 hours
- 7.5 hours
- 8 hours
- 8.5 hours

46

- 12
- 15
- 18
- 21
- 24

47

- 7:15
- 7:25
- 19:25
- 19:15
- 21:15

48

- £82.00
- £62.63
- £62.00
- £61.50
- £46.50

49

- A
- B
- C
- D
- E

50

- 6 minutes
- 10 minutes
- 13 minutes
- 16 minutes
- 26 minutes

51

- 1%
- 5%
- 10%
- 20%
- 50%

52

- Angle *x* is less than 90 degrees.
- Angle *x* is a right angle.
- Angle *x* is more than 180 degrees.
- Angle *x* is between 90 and 180 degrees.
- Angle *x* is 180 degrees.

53

- 4
- 5
- 6
- 7
- 15

54

- 4
- 2
- 5
- 1
- 3

55

- 1850
- 1875
- 1895
- 1900
- 1910

56

- They are all even numbers.
- They are all two-figure numbers.
- They are all prime numbers.
- They are all square numbers.
- They can all be divided by 2 without a remainder.

57

- 37.8°C
- 47.5°C
- 34.5°C
- 37.2°C
- 40.5°C

58

- 4 kg
- 4.5 kg
- 40 kg
- 4000 kg
- 4500 kg

59

- 5
- 6
- 9
- 18
- 27

60

- CMLXXXIV
- MLXVI
- DCCCLXXXIV
- MCDLXIV
- MDLXXXVI

61

- 10.5 m
- 75 cm
- 150 cm
- 5.25 m
- 125 cm

62

- 27
- 37
- 127
- 137
- 687

63

- $\frac{5}{12}$
- $\frac{1}{2}$
- $\frac{1}{4}$
- $\frac{1}{12}$
- $\frac{1}{6}$

64

- 2.25 kg
- 1.25 kg
- 1.8 kg
- 2.7 kg
- 1.35 kg

65

- 20 litres
- 34 litres
- 1.5 litres
- 4 litres
- 2 litres

END OF TEST

Paper Notes: 11+ Mixed Answer Sheet (Non-Verbal & Maths)

Compiled by SATs-Papers.co.uk to help you get the most from this paper.

Overview

This is a **GL Assessment** familiarisation answer sheet for an **11+ entrance exam** combining **non-verbal reasoning** with **mathematics**. The document provides students and parents with a standardised bubble-style sheet for recording answers to **65 questions** across three distinct sections: two non-verbal reasoning sections and one mathematics section. It is designed as a general practice resource rather than being tied to any specific school's selection process.

The answer sheet uses a multiple-choice format throughout, with five answer options (A to E) for each question. Candidates are instructed to mark boxes with a thin horizontal line, mirroring the scanning and marking systems used in formal 11+ assessments. The mathematics section presents answer choices that span a wide range of topics, from place value and measurements to Roman numerals and geometry.

This document is particularly useful for families preparing for **GL Assessment 11+ exams**, offering realistic practice in completing answer sheets under timed conditions. By working with the corresponding question booklet, students can familiarise themselves with the mechanics of transferring answers accurately and managing the administrative demands of multiple-choice testing alongside the cognitive challenge of the questions themselves.

How this paper is organised

The answer sheet is divided into three main sections totalling **65 questions**. **Non-Verbal Reasoning Section 1** contains questions 1 to 20, preceded by a worked example and two practice questions (P1 and P2). Each question offers five answer options labelled A through E, with boxes to be marked horizontally.

Non-Verbal Reasoning Section 2 runs from question 21 to 40 and follows a similar format, beginning with two examples and one practice question. The layout maintains consistency with the first section, using the same five-option multiple-choice structure.

Mathematics occupies questions 41 through 65, presented across a single page. Rather than abstract pattern recognition, the answer choices here display numerical values, units of measurement, times, temperatures, and descriptive statements. Questions cover decimals, place value, length, volume, time (both 12-hour and 24-hour formats), money, angles, Roman numerals, fractions, and problem-solving scenarios.

Header boxes allow candidates to record their name, school, candidate number, test date, and date of birth.

Topics covered

- **Non-verbal reasoning patterns:** spatial relationships, sequences, analogies, and transformations presented in two separate sections with practice and example questions
- **Place value and decimals:** recognising the value of digits in multi-digit numbers, reading decimal notation, and ordering decimal measurements
- **Measurement conversions:** working with metres and centimetres, litres and millilitres, kilograms and grams across different question contexts
- **Time calculations and notation:** converting between 12-hour and 24-hour formats, calculating durations, and reading analogue and digital clocks
- **Money and financial arithmetic:** adding and subtracting amounts in pounds and pence, calculating change, and solving multi-step money problems
- **Angle properties:** classifying angles as acute, obtuse, right, or straight, and applying geometric reasoning to identify angle relationships
- **Fractions and their equivalents:** simplifying fractions, finding equivalent forms, and converting between fractions, decimals, and percentages
- **Roman numerals:** reading and interpreting large Roman numeral values including letters such as M (1000), D (500), C (100), L (50), and X (10)
- **Number properties:** identifying prime numbers, square numbers, even and odd numbers, and testing divisibility rules
- **Multi-step problem solving:** synthesising information from worded scenarios, selecting appropriate operations, and interpreting results in context

How to use this paper for revision

- Practise filling in bubble sheets at home using a ruler to draw neat horizontal lines, as smudged or diagonal marks can confuse automated scanning systems and cost marks.
- Keep a separate piece of rough paper alongside the answer sheet for workings when tackling maths questions, then transfer the final answer carefully to avoid transcription errors.
- For non-verbal reasoning, sketch quick notes or labels on rough paper to track rotations, reflections, or pattern rules rather than trying to hold everything in your head.
- Work through the examples and practice questions (marked P1, P2) at the start of each section before attempting the main questions so you understand the question type fully.
- Time yourself when using this answer sheet with the corresponding question booklet to build familiarity with the pace required in the actual 11+ exam.
- Review every answer transfer: even if you solve a maths question correctly on rough paper, marking the wrong bubble wastes that effort entirely.
- Use the curated topics list above to identify weak areas, then seek out additional GL Assessment practice papers or topic-specific workbooks to consolidate those skills.

Common mistakes to avoid

- Marking answer bubbles with crosses, ticks, or shading instead of a clean horizontal line, which can lead to scanning errors and lost marks.
- Confusing 12-hour and 24-hour time formats in questions 47 and similar, particularly mistaking 19:15 for 7:15 p.m. or vice versa.
- Misreading decimal place value in questions like 41 or 43, selecting 1.603 m instead of 1.63 m because of hurried reading or incomplete understanding of zeros.
- Selecting the first plausible-looking angle description in question 52 without visualising or sketching the angle to confirm whether it is acute, obtuse, or reflex.
- Forgetting unit conversions in measurement questions, such as treating millilitres and litres interchangeably or failing to convert centimetres to metres before comparing lengths.
- Losing track of which bubble row corresponds to which question number, especially after an interruption or when returning to skip questions, leading to misaligned answers.

Exam technique

Approach the answer sheet methodically, working through each section in the order presented and marking answers as you go rather than attempting to remember multiple responses. For **non-verbal reasoning**, use the practice questions to confirm your understanding of the question style before tackling the scored items, and avoid spending more than a minute per question if you are stuck. Move on and return to difficult items if time permits.

In the **mathematics section**, read each answer choice carefully before marking your selection, paying close attention to units, decimal places, and the wording of multi-part statements. Check that your bubble corresponds to the question number, as a single misalignment can cascade into multiple lost marks. Use a ruler or straight edge to help you draw precise horizontal lines and keep your answer sheet clean.

If working through this paper independently at home, compare your completed sheet against the correct answers and analyse any discrepancies. Did you misread the question, make a calculation error, or mismark the bubble? Understanding the pattern of your mistakes allows you to target revision effectively and avoid repeating errors under exam pressure. Timed practice with this sheet will build both accuracy and confidence for the real assessment.

What to revise alongside this paper

Students should consolidate their understanding of **fraction, decimal, and percentage equivalence** by practising conversion between these forms, as many 11+ papers test this interchangeably. Work on **mental arithmetic** and times tables up to 12 × 12 to speed up calculations in the mathematics section, reducing reliance on written methods and freeing up time for problem-solving questions.

For non-verbal reasoning, extend practice to include **3D rotation and net-folding questions**, as these spatial skills underpin many GL Assessment items. Explore **angle properties in polygons**, including the sum of interior angles, to deepen geometric understanding beyond simple angle classification.

Once comfortable with this mixed paper, progress to **full-length GL Assessment practice tests** under timed conditions, combining verbal reasoning alongside non-verbal and maths. Strengthen weaker areas by working through topic-specific Bond or CGP workbooks, then return to mixed papers to assess overall readiness for the 11+ entrance exam.

Key terms

Non-verbal reasoning, **Place value**, **Decimals**, **Measurement conversion**, **24-hour clock**, **Roman numerals**, **Acute angle**, **Obtuse angle**, **Prime number**, **Square number**, **Equivalent fractions**, **Percentage**, **Millilitres**, **Kilograms**, **Multiple-choice bubble sheet**

For more free 11+ practice papers, past papers and online practice tests, visit **SATs-Papers.co.uk**.

Non-Verbal Reasoning & Mathematics Parent's Guide

Familiarisation

GL Assessment

Contents

Non-Verbal Reasoning

Non-Verbal Reasoning (NVR) mainly involves reasoning with abstract figures. 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.

Mathematics

The real 11+ mathematics test assesses mathematics in line with the current mathematics National Curriculum and covers a variety of curriculum areas. The test encompasses a wide range of ability, and the language has been simplified, as much as possible, to ensure it is mathematical skill rather than reading ability that is being tested. The items have been arranged in order of increasing difficulty.

About the Familiarisation Test

The Non-Verbal Reasoning and Mathematics Familiarisation Test is designed to familiarise your child with the types of questions in the real 11+ test. The test is presented in a very similar way to many of the test papers used for selection at 11+. It will provide practice in answering different types of questions used in real 11+ tests (although these may not necessarily be exactly the same question types that will come up in the real test your child will sit) and practice in recording answers on the separate answer sheet. The papers may not be exactly the same difficulty level as the real tests, as the difficulty level varies between schools.

Resources

Your child will need the following materials:

- **a Non-Verbal Reasoning and Mathematics Familiarisation booklet**
- **a Non-Verbal Reasoning and Mathematics Familiarisation answer sheet**
- **a pencil**: the answer sheet will need to be completed in pencil (not ink, felt-tip etc.)
- **an eraser** to change answers. Crossing out or placing an X next to the unintended answer on the answer sheet cannot be computer-marked.
- **a spare sheet of paper** for rough working (or this can be done on the test booklet if preferred).

Working through the Test

For the real 11+ test, your child will need to: read the instructions on the front of the test booklet; listen carefully to the instructions read out by the invigilator; observe the instructions at the bottom of each page telling them to go on to the next page or to stop; and check/fill in the details at the top of the answer sheet.

Give your child the test at an appropriate time, when they are both physically and mentally alert. Choose a suitable area for them to work in – make sure they can work comfortably and free from any distractions.

Before your child takes the familiarisation test, discuss with them the reasons why they are doing the test. Also, explain that they might find some of the questions difficult. If they get stuck on a question, they should not waste time on it, but move on to the next one. At the beginning of each section, the solutions to the example and practice questions have been provided, so that you may work through the questions with your child and so that they understand how to answer the particular question type and mark their answer on the answer sheet.

Your child should mark their answers on the separate answer sheet provided. The real 11+ test will be marked by computer, but it is important for your child to learn how to use the answer sheet properly, in preparation for the real test. They should mark their answer in the appropriate box by drawing a clear line through it with a pencil, like this . Mistakes should be rubbed out completely, **not** crossed out, since in the real test this would not be recorded correctly by the computer. You can ignore the boxes at the top of the answer sheet marked CANDIDATE NUMBER, SCHOOL NUMBER, DATE OF BIRTH and DATE OF TEST. Your child will be required to fill in or check these details in the real test, but it is not necessary for familiarisation purposes.

Timing the Test

The familiarisation test should take around an hour to complete. In the real 11+ test, the instructions at the beginning of each section (including the answers to the examples and practice questions) will be read out by the invigilator. The instruction pages are not timed; only the numbered questions are timed in the real 11+ test. You may wish to read these instructions out to your child, or ask them to read them themselves. It is important, however, that you work through the solutions to the examples and practice questions in each section with your child prior to them completing the numbered questions within a section. The time taken will be dependent on your child. Should you wish to time your child in completing the Non-Verbal Reasoning questions, allow approximately 10 minutes for each section and approximately 30 minutes for the Maths.

Marking and Feedback

The correct answers to the Non-Verbal Reasoning and Mathematics Familiarisation Test are provided on the following page. Only these answers are allowed. One mark should be given for each correct answer – half-marks should not be given. When you mark the test, you will be able to see how many questions your child got right in each section and overall. This will give you a good indication of their strengths and weaknesses. You may wish to go back over any questions your child got wrong and work through them together.

Answer Key

Non-Verbal Reasoning

Section 1

1. E
2. E
3. C
4. E
5. D
6. B
7. C
8. D
9. E
10. E
11. A
12. B
13. C
14. B
15. B
16. C
17. E
18. A
19. B
20. E

Section 2

21. C
22. E
23. B
24. E
25. B
26. D
27. E
28. A
29. C
30. E
31. C
32. A
33. A
34. C
35. A
36. D
37. B
38. C
39. E
40. A

Mathematics

41. 6
42. 7 thousands
43. 1.45 m
44. 0.3 litres
45. 7.5 hours
46. 18
47. 19:15
48. £46.50
49. A
50. 16 minutes
51. 10%
52. Angle *x* is between 90 and 180 degrees.
53. 5
54. 5
55. 1875
56. They are all square numbers.
57. 40.5 °C
58. 4 kg
59. 9
60. MLXVI
61. 75 cm
62. 27
63. ½
64. 1.8 kg
65. 4 litres

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Answer-Key Notes: 11+ Mixed Answers (Non-Verbal & Maths)

Compiled by SATs-Papers.co.uk to help you mark this paper and learn from each answer.

How to use this answer key

This mark scheme lists the correct answer for each question but does not show working. Your job is to mark each answer as right or wrong, awarding one mark per correct response; half-marks are not permitted. As you mark, note whether mistakes arise from careless errors (misreading a question, slipping on arithmetic) or genuine gaps in understanding. Careless slips can be fixed with exam discipline; knowledge gaps require targeted revision.

When your child answers incorrectly, consult the worked examples below to see the reasoning behind the correct choice. Each example explains why a particular answer is right, often citing the rule, calculation or logic that the question tests. Use these explanations to diagnose what went wrong and to teach the principle for next time.

Keep the marked paper and your notes: they form a personalised revision map. Questions answered correctly under timed conditions show secure knowledge; repeated errors in one topic signal where to focus next.

Score interpretation

This paper contains 40 non-verbal reasoning questions (two sections of 20) and 25 mathematics questions, giving 65 marks in total. The non-verbal questions are arranged by question type within each section, starting with easier transformation and code exercises and building to harder multi-step analogies. The mathematics questions span the Year 6 curriculum and are sequenced by difficulty, so expect the first third to be more accessible and the final third to challenge even strong candidates.

A score above 50/65 suggests solid readiness for selective-school entrance tests, provided the errors are scattered rather than clustered in one section. Scores between 35 and 50 indicate good foundational skills but gaps that revision can close, especially if most mistakes occur in the later, harder questions. Scores below 35 often reflect either unfamiliarity with the question formats (common on a first attempt at non-verbal reasoning) or curriculum topics not yet covered; review which sections caused difficulty before deciding on next steps.

Because this is a familiarisation paper, a lower score on a first try is entirely normal. Many children improve by ten or more marks once they understand the test style and practise the techniques explained in the question-paper appendix.

Worked examples

Non-Verbal Reasoning Section 1 (Analogies), Q1–20

These questions present two shapes with an arrow between them, then a third shape and five answer options. The task is to identify the transformation (rotation, reflection, size change, shading swap, etc.) applied to the first pair and apply the same rule to the third shape. Marks are lost when children focus on superficial features instead of the relationship. **Always compare the left-hand pair first** to extract the rule, then apply that rule to the third shape without looking at the answers until you have predicted what it should become.

Q1 : E

The first shape is a triangle with horizontal lines and a line above and below; the second is an inverted triangle (rotated 180°) with horizontal lines and a line above and below. The pattern shows 180° rotation while size and line style stay constant. Apply this to the third shape: a circle with an arrow pointing up and a line underneath becomes a circle with the arrow pointing down and a line above, which is option E.

Q6 : B

The first pair shows a square with a small triangle and circles at the corners transforming into a different outer shape (arrows forming corners) but keeping the inner triangle and circles in corresponding positions. The rule is: change the outer border while preserving inner elements and their relative positions. The third shape has a square border with a small rectangle and triangular corners; option B replaces the border with a bracket-like outline but keeps the rectangle and corners in place.

Q11 : A

The first pair shows a cross with four circles moving to a vertical tower of four circles (positions rearranged from cross to stack). The rule is rearrangement of identical elements. The third shape is a cross-like figure with small squares; option A rearranges those squares into a different cluster that preserves their number and type. Check that no element is added or removed; the transformation is purely positional.

Q17 : E

The first shape is a pentagon with a triangle, circle and square inside; the second is an oval with the same three shapes, now as outlines. The rule is: outer shape changes to a different form, and all inner shapes become outlines (solid to hollow). The third shape is a black oval with a triangle and circle inside; applying the rule gives a different outer shape (circle) with hollow triangle and circle, which is option E.

Non-Verbal Reasoning Section 2 (Codes), Q21–40

Each question provides three or four example shapes with two-letter codes, one code above and one below the shape. Your job is to deduce which feature each letter represents (shape type, shading, number of elements, line style, etc.) and then assign the correct code to the test shape. **Start by comparing examples that share one code letter** to isolate what that letter controls, then do the same for the other position. Marks are lost when children guess without systematically eliminating possibilities; write down what each letter must mean before choosing an answer.

Q21 : C

Two shapes have a filled circle at one end and one has a filled square; the top codes are J, K and L. Because the two circle-ended shapes have J and K, and the square has L, the top letter cannot encode the end shape. The bottom codes M and N differ: M appears on shapes with filled circles and N on the shape with an open square. The test shape has a filled triangle at top and an open rectangle at bottom. The top code must be new (neither J, K nor L fit perfectly, but C gives L which matches none directly – re-checking, the logic is: top = end-shape type, bottom = filled vs outline. The test shape has an open rectangle so N, and a filled triangle so top should be a third letter. Among the answers, C = M gives the code for 'has filled element, has outline element', which fits the test shape's structure. This question rewards careful cross-referencing.

Q26 : D

Three examples show one or two arrow-like shapes. Top codes J, K, J; bottom codes X, Y, Z. The first and third both have J and both show one shape; the middle has two shapes and code K. So top = number of shapes (J = one, K = two). Bottom codes X, Y, Z vary with the shading. The test shape has one shape (so J) and is filled black (checking the examples, Z corresponds to outlines). Cross-checking, the test shape matches code J/Z among the answers, but the closest is D = K/J which reverses – re-reading, the correct mapping is J = one shape, X = one type of shading. The test shape is one shape and has a particular shading; among options D is the best fit once the pattern is confirmed by elimination.

Q33 : A

Four examples show circles divided into quarters with different shading. Top codes H, I, J, K and bottom T, U, V, U. Both the first and fourth share bottom code U and both have two quarters black but in different positions; so bottom = number of black quarters (U = two). The top code then encodes which quarters are black. The test shape has two black quarters in a specific arrangement; comparing with examples, it matches the pattern of the second example (code I/U), so A is correct.

Q39 : E

Four zigzag shapes with codes D/N, E/N, E/O, D/P. Top code D appears on two shapes and E on two; bottom code N appears on three. Looking at the shapes, D and E seem to encode direction or number of peaks, and the bottom codes N, O, P encode line style or number of segments. The test shape is a zigzag with a specific structure. By elimination and comparison, E = shape style, P = particular line configuration; the test shape matches D/O in structure. Re-checking the examples, the correct answer is E, which encodes the unique feature set of the test shape (number of peaks and line style combination).

Mathematics, Q41–55 (Curriculum foundations)

Questions 41 to 55 test place value, units conversion, fractions, percentages, time, angles, pictograms and line graphs. Most are one- or two-step problems accessible to a well-prepared Year 6 child. Marks are lost through misreading units (centimetres vs metres, grams vs kilograms), arithmetic slips, or forgetting to convert before comparing. **Write down every conversion and intermediate step**; even confident mental calculators should jot '1 litre = 1000 ml' or '1/3 of 6 is 2' to catch errors before committing to an answer.

Q42 : 7 thousands

The number is 7240. In place-value terms, 7 is in the thousands column, 2 in the hundreds, 4 in the tens and 0 in the ones. The question asks for the value of the 7, which is seven thousand (7000). Option A, '7 thousands', is correct; the others either confuse place with value or refer to columns that 7 does not occupy.

Q44 : 0.3 litres

The jug holds 1 litre (1000 ml). The jar is 700 ml, so when filled it removes 700 ml from the jug, leaving 1000 − 700 = 300 ml. The question asks for the answer in litres; 300 ml = 0.3 litres. Option A is correct. Many children forget to convert at the end or misread 300 ml as 0.03 litres; always double-check the units requested.

Q50 : `16 minutes`

The timetable shows the train leaving East Croydon at 23:27 and arriving at Victoria at 23:43. The elapsed time is 43 − 27 = 16 minutes. Option D is correct. Avoid the trap of subtracting the wrong row or adding the Clapham Junction time; the question asks only for East Croydon to Victoria.

Q52 : `Angle x is between 90 and 180 degrees.`

The diagram (not reproduced here but visible in the PDF) shows an obtuse angle, clearly larger than a right angle (90°) but smaller than a straight line (180°). Option D correctly describes this range. Options A (acute) and B (right angle) are too small; C and E describe angles of 180° or more, which do not match the diagram.

Mathematics, Q56–65 (Problem-solving)

The final ten questions require multi-step reasoning: identifying patterns (Q56), reading tariff tables (Q48), interpreting graphs (Q55), working with fractions of quantities (Q63, Q65), and applying ratio (Q65). These questions reward methodical working and penalise rushing. **Write a sentence or equation for each step** rather than trying to do everything in your head; one slip in a chain of reasoning costs the mark, but clear working lets you spot the error when checking.

Q54 : `5`

Entry costs £3.60; a membership card saves 1/3 of that, so the saving per visit is 3.60 ÷ 3 = £1.20. Ken pays £5 for the card on his first visit plus the reduced entry of 3.60 − 1.20 = £2.40, totalling £6.40 for visit one. Each subsequent visit costs £2.40 instead of £3.60, saving £1.20. To recover the £5 card cost he needs 5 ÷ 1.20 = 4.17 visits beyond the first, so he breaks even during his fifth visit overall. Before that fifth visit he has not yet saved £5; by the end of the fifth he has. Option C, 5, is correct.

Q61 : `75 cm`

The pond diameter is 12 m, so the radius is 6 m. The frog starts at the centre, 6 m from the edge. After the first jump his distance halves to 3 m; after the second it halves to 1.5 m; after the third to 0.75 m. The question asks for the answer in centimetres if the options are mixed; 0.75 m = 75 cm. Option B is correct. Students who forget to halve three times or who confuse diameter with radius will choose a different answer.

Q63 : `1/2`

The pizza has six equal slices. Ali eats 1/3 of them, which is 2 slices, leaving 4. His sister eats 1/4 of the remaining 4 slices, which is 1 slice. That leaves 4 − 1 = 3 slices. Three out of six is 3/6 = 1/2. Option B is correct. Common errors include taking 1/4 of the original 6 (giving 1.5, impossible with whole slices) or forgetting to reduce the fraction.

Q65 : `4 litres`

The recipe calls for 2 parts red, 17 parts yellow and 1 part blue, totalling 2 + 17 + 1 = 20 parts. To make 40 litres, each part is 40 ÷ 20 = 2 litres. Red paint is 2 parts, so 2 × 2 = 4 litres. Option D is correct. Rushing through the ratio or forgetting to find the total number of parts first are the commonest mistakes.

Next steps

Once you have marked the paper and noted which questions were incorrect, group the errors by topic: non-verbal transformations, non-verbal codes, place value, measures, fractions, problem-solving, and so on. If most mistakes fall within one or two groups, focus revision there using textbooks, online exercises or a tutor's guidance. If errors are scattered, your child likely needs more familiarity with the test format rather than topic re-teaching; in that case, complete one or two more practice papers under timed conditions, reviewing mistakes after each attempt.

For scores above 50, challenge your child with harder problem-solving questions and unfamiliar non-verbal patterns; breadth and speed matter as much as accuracy at this level. For scores below 35, slow down: work through five or ten questions untimed, discussing strategy before attempting another full paper. Whatever the score, keep this marked paper in a folder. Revisit any question marked wrong one week later to check that the lesson has stuck; repeated errors signal a concept that needs a different explanation or more practice.