

GL Buckinghamshire Mock 3

Mathematical and Non-Verbal Skills



Mathematical and Non-Verbal Skills

- This test is divided into two sections.
- The first section tests Non-Verbal Reasoning and Spatial Reasoning skills. It contains five 5-minute subtests. You will have a chance to practise a few questions before each subtest.
- The second section tests Mathematics. It consists of a 5-minute practice section followed by a 25-minute test.
- All answers should be marked on the separate answer sheets provided.

Please turn over the page to begin the practice section for Non-Verbal Reasoning Subtest 1.

Non-Verbal Reasoning Subtest 1 Practice

(untimed)

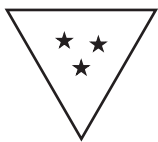
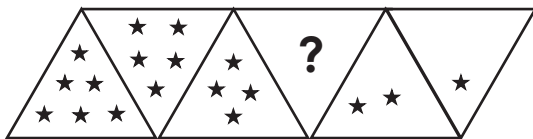
This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

In each question, there are five triangles arranged in order. One of these triangles has been left empty. Decide which of the five triangles should take the place of the triangle with the question mark.

Choose the missing triangle and mark it on your answer sheet.

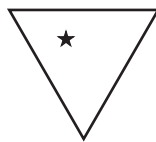
A Example



a



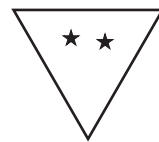
b



c



d

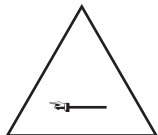
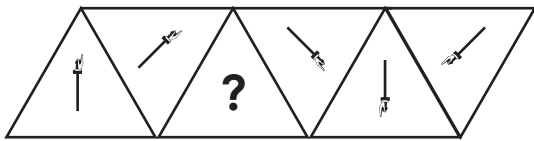


e

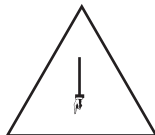
The answer is **a**. The number of stars decreases by one as the triangle series progresses from left to right.

1 Practice

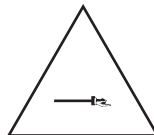
Choose the missing triangle and mark it on your answer sheet.



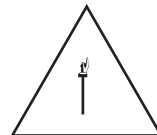
a



b



c

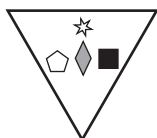
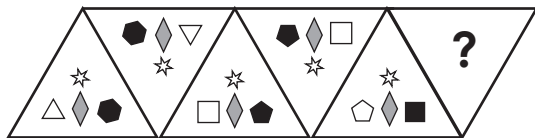


d

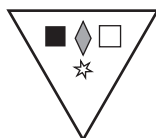


e

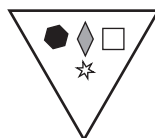
2 Practice



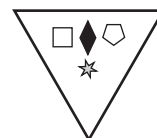
a



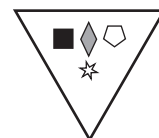
b



c



d



e

END OF PRACTICE

Non-Verbal Reasoning Subtest 1 begins on the next page.

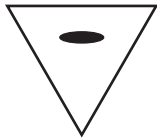
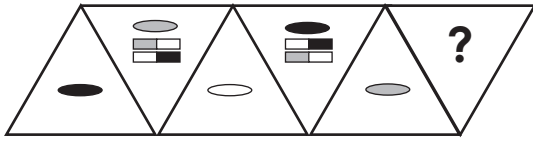
- You have 5 minutes to complete Non-Verbal Reasoning Subtest 1.
- There are 10 questions to answer.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

Non-Verbal Reasoning Subtest 1

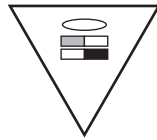
(5 minutes)

Choose the missing triangle and mark it on your answer sheet.

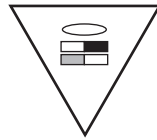
1



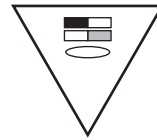
a



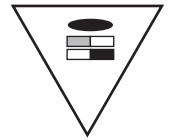
b



c

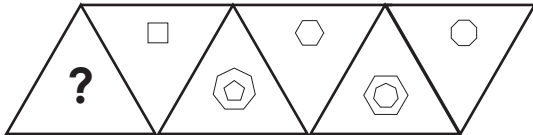


d

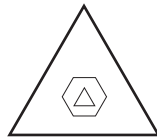


e

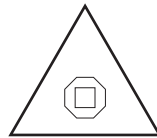
2



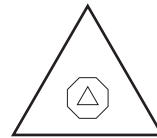
a



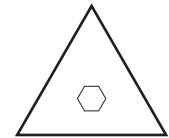
b



c

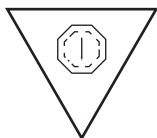
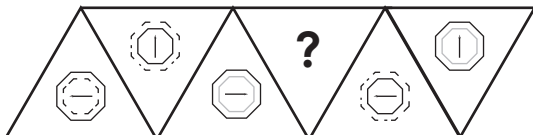


d

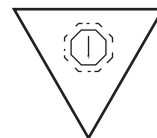


e

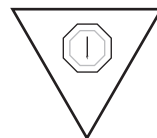
3



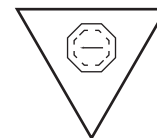
a



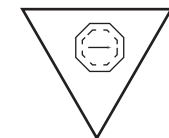
b



c

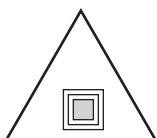
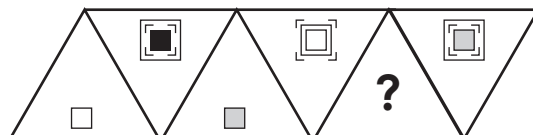


d

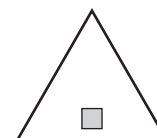


e

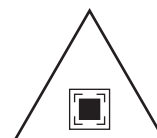
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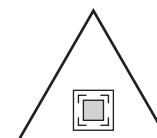
a



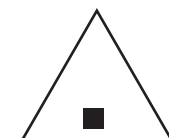
b



c

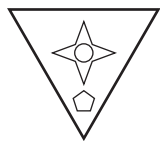
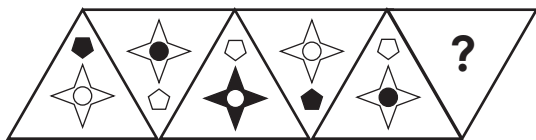


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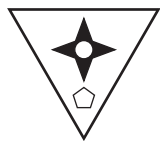


e

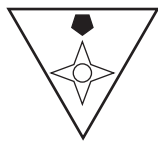
5



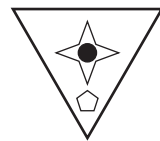
a



b



c



d

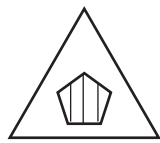


e

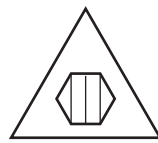
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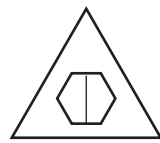
a



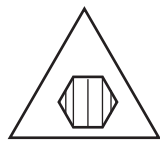
b



c

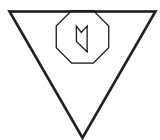
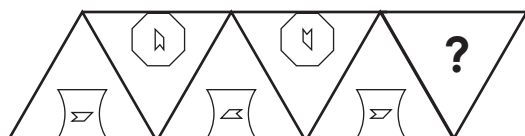


d

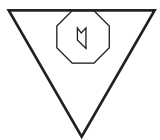


e

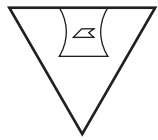
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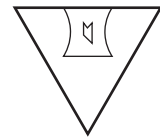
a



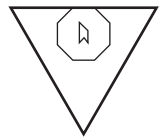
b



c

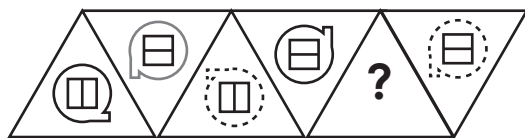


d



e

8



a



b



c

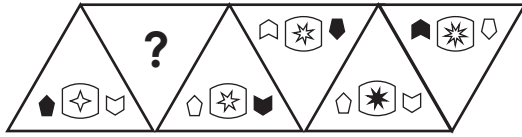


d

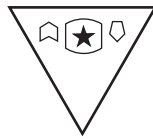


e

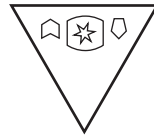
9



a



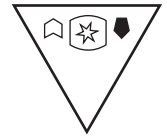
b



c

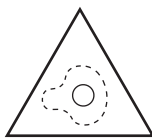
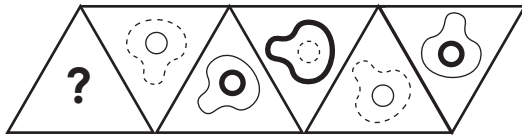


d



e

10



a



b



c



d



e

END OF NON-VERBAL REASONING SUBTEST 1.

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.

Non-Verbal Reasoning Subtest 2 Practice

(untimed)

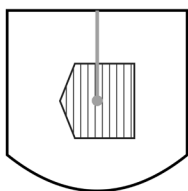
This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

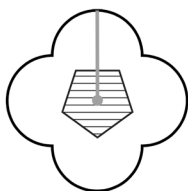
In each question, there are figures and code letters that go with them. There may be two, three or four letters that make up each code. Each letter within a code means something different and corresponds to a part of the figure. One figure is missing a code.

Choose the missing code and mark it on your answer sheet.

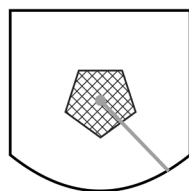
A Example



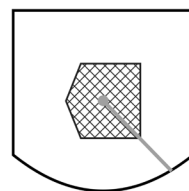
RWLF



SXMF



RXNG



????

a. SXNF

b. RWNF

c. SXMG

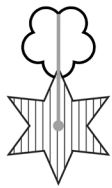
d. SXLF

e. RWNG

The answer is **e**. Each letter in the code represents a different feature of the figure. The first letter correlates to the outside shape; the second tells us the inner shape; the third tells us the shading pattern on the inner shape; and the fourth tells us the direction of the grey line. Applying these rules to the fourth figure gives the code RWNG, which is answer e.

1 Practice

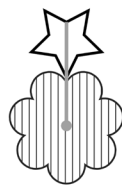
What is the missing code?



NQ



OQ



OR



??

a. OQ

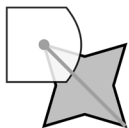
b. OS

c. NQ

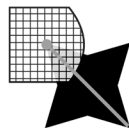
d. OR

e. NR

2 Practice



IVC



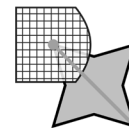
JWC



KXD



JXD



???

a. JXC

b. KWD

c. JVC

d. IWC

e. IXD

END OF PRACTICE

Non-Verbal Reasoning Subtest 2 begins on the next page.

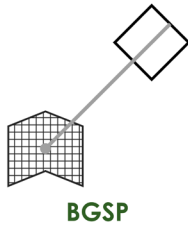
- You have 5 minutes to complete Non-Verbal Reasoning Subtest 2.
- There are 10 questions to answer.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

Non-Verbal Reasoning Subtest 2

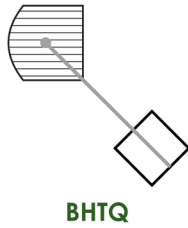
(5 minutes)

In these questions, you must work out the missing code and mark its letter on your answer sheet.

1



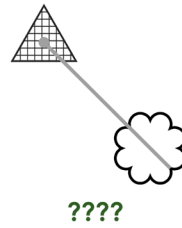
BGSP



BHTQ



CITP



????

a. CGTQ

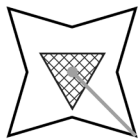
b. CISQ

c. CHTQ

d. CHSQ

e. BGTQ

2



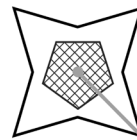
PL



PM



QM



??

a. RL

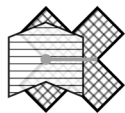
b. QM

c. PM

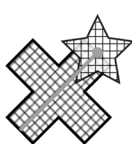
d. PL

e. QL

3



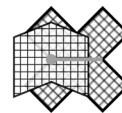
VPIM



VQJN



WQKM



????

a. WQKN

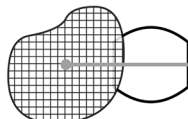
b. WPJN

c. WPKM

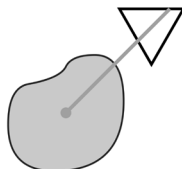
d. WQIN

e. VPJM

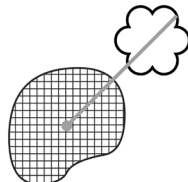
4



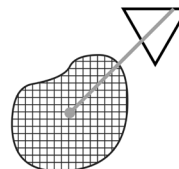
MUCH



NUDI



OVCI



????

a. MVDH

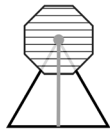
b. NUCI

c. MVCH

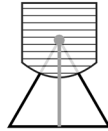
d. MUCI

e. NUCH

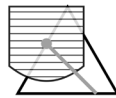
5



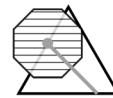
LP



MP



MQ



??

a. NP

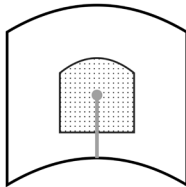
b. MP

c. MQ

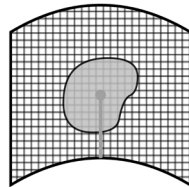
d. LP

e. LQ

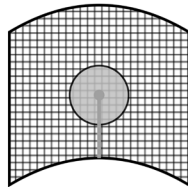
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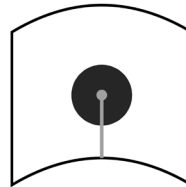
HMB



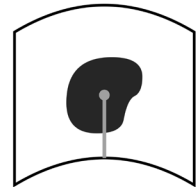
INC



IOC



HOD



???

a. INB

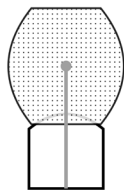
b. HMC

c. IOD

d. IMC

e. HND

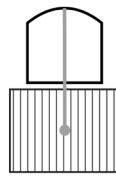
7



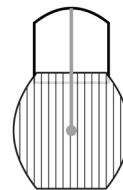
BWJE



CXKE



BXLF



????

a. BWLF

b. CWKF

c. BWKF

d. BXJF

e. CXJF

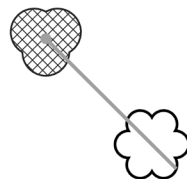
8



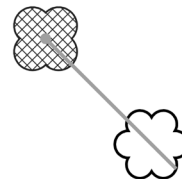
HS



IS



IT



??

a. IT

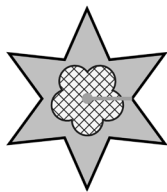
b. HT

c. HS

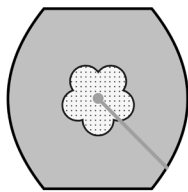
d. IS

e. IU

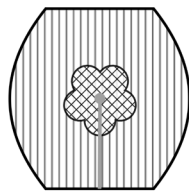
9



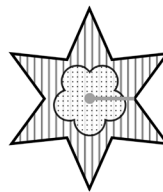
INCF



JNDG



JOCH



????

a. IODF

b. IOCG

c. JOCF

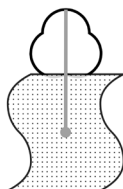
d. IOCH

e. JODG

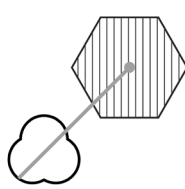
10



EJOS



FJPT



FKQS



????

a. EKOT

b. EKQT

c. EKOS

d. EJPS

e. FKQT

END OF NON-VERBAL REASONING SUBTEST 2.

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.

Non-Verbal Reasoning Subtest 3

Practice Section

(Untimed)

This practice section gives an example of the sort of question you will be faced with in Non-Verbal Reasoning Subtest 3, with the correct answer filled in on the answer sheet so that you can see how to do it.

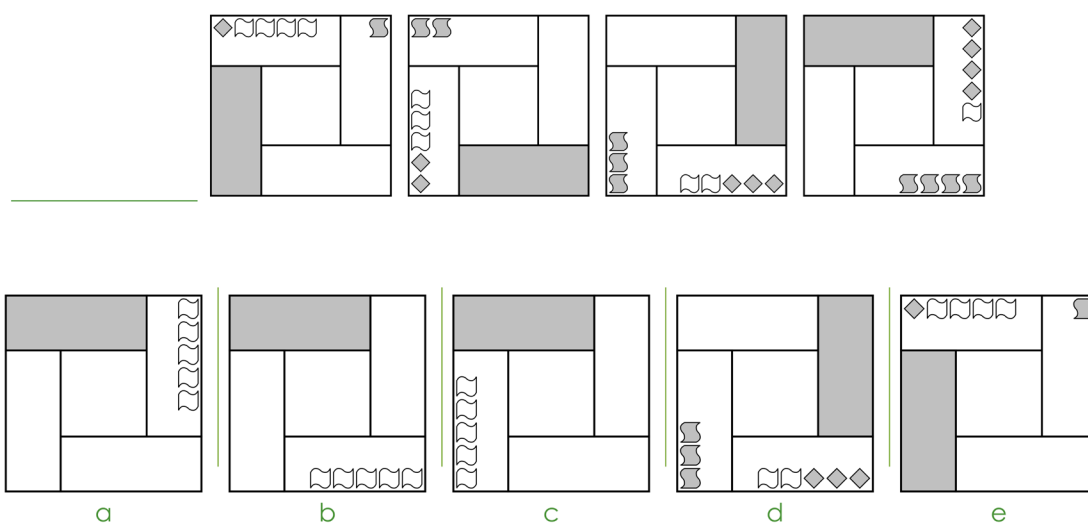
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

In these questions, there is an incomplete series. You are shown four figures, with one missing figure. The position of the missing figure may vary between questions.

You must choose the missing figure that will complete the series in the best way from the five possible answer figures.

Choose the correct figure and mark it on your answer sheet.

A Example

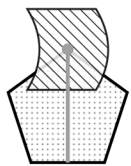
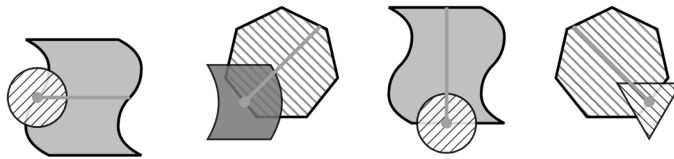


The answer is **a**. In this series, multiple things are changing. The large grey rectangle inside the square moves around the corners in an anticlockwise direction. Secondly, the position of the grey flags also moves round in an anticlockwise direction and they increase in number by one each time. The number of grey diamonds also increases by one each time. The white flag shapes decrease by one each time.

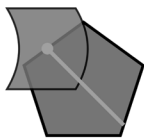
Now try the practice questions and mark your answers on the answer sheet.

1 Practice

Choose the figure that completes the series.



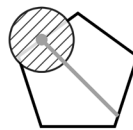
a



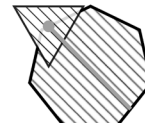
b



c



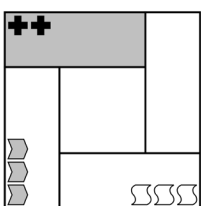
d



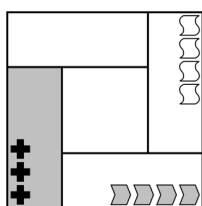
e

2 Practice

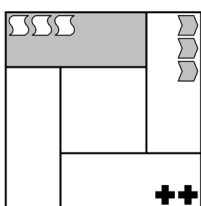
Choose the figure that completes the series.



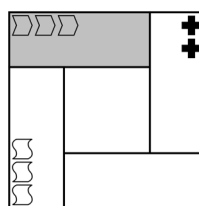
a



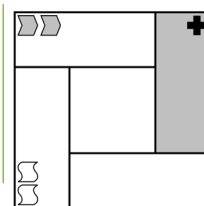
b



c



d



e

END OF PRACTICE SECTION

Non-Verbal Reasoning Subtest 3 begins on the next page.

- You have 5 minutes to complete Non-Verbal Reasoning Subtest 3.
- There are 10 questions in this subtest.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

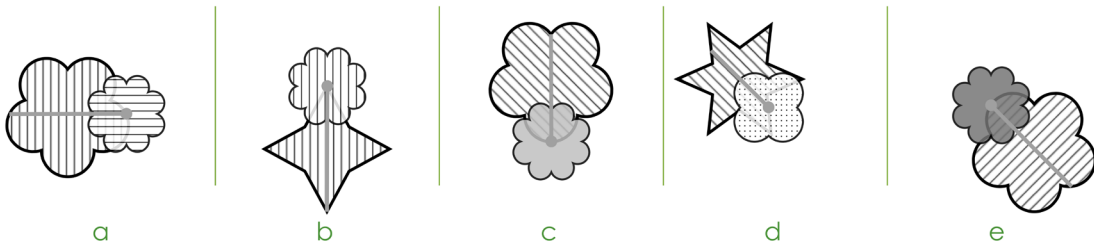
Non-Verbal Reasoning Subtest 3

(5 minutes)

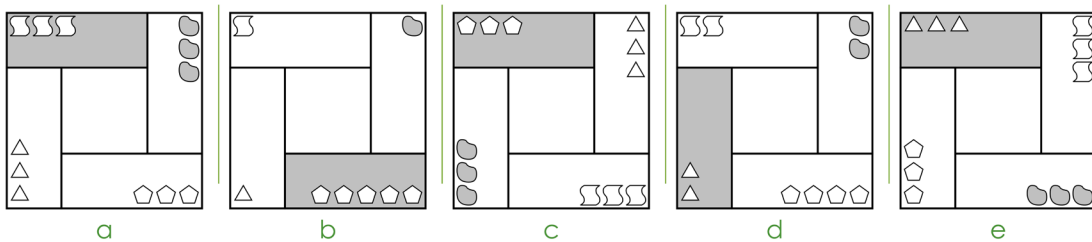
Work out the correct answer and mark its letter on your answer sheet.

Choose the figure that completes the series.

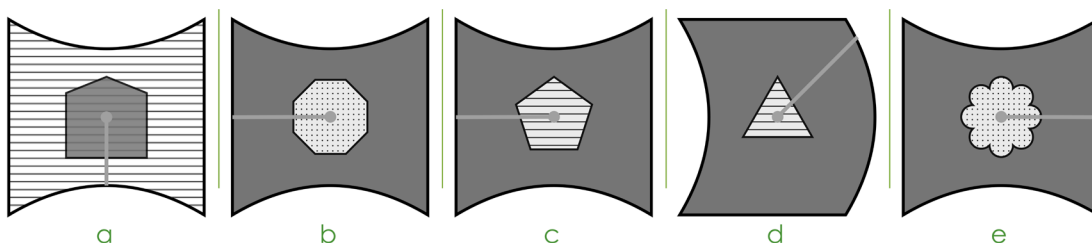
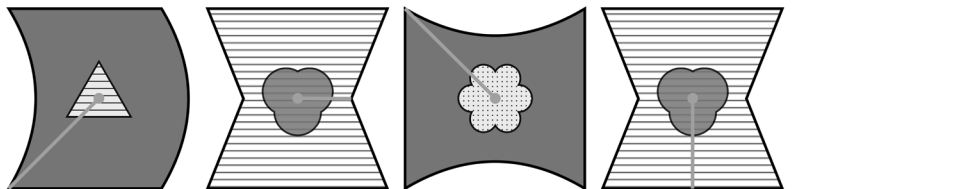
1



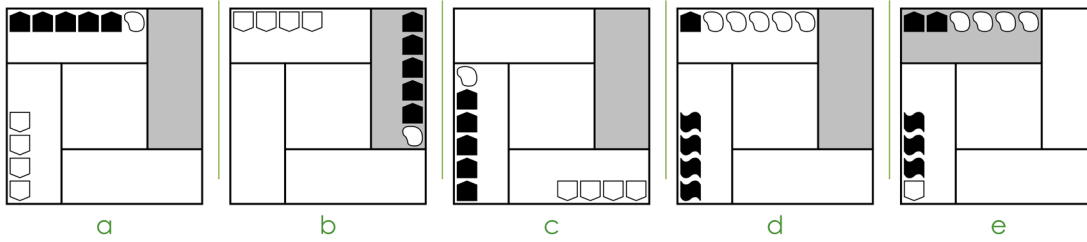
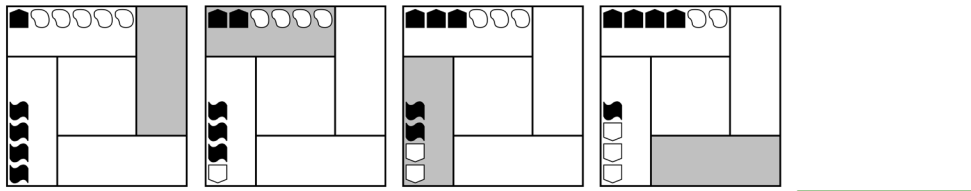
2



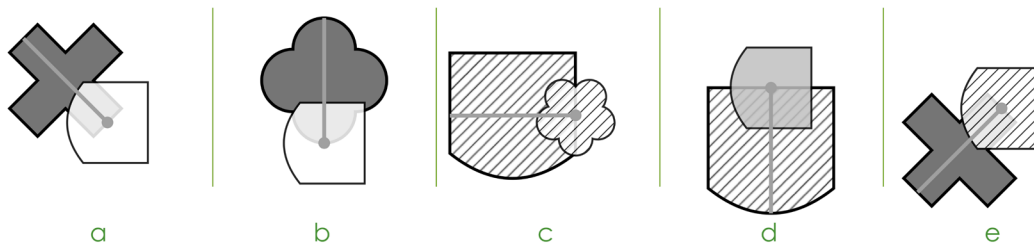
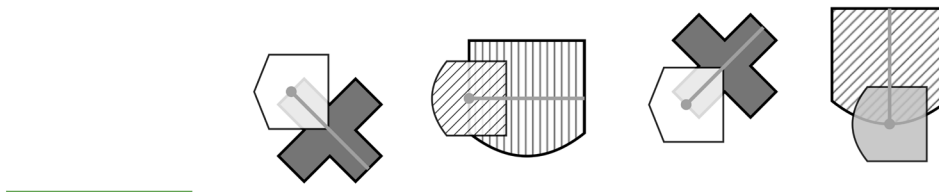
3



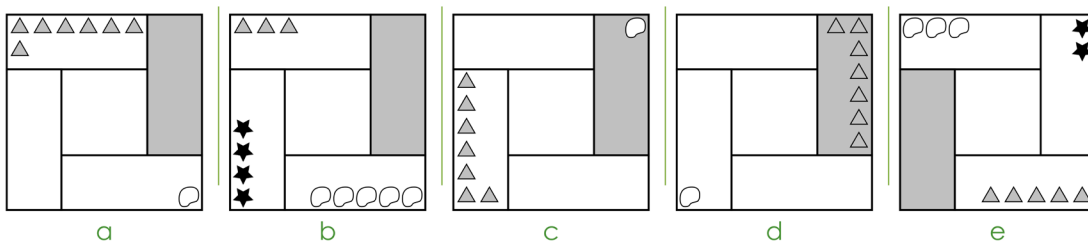
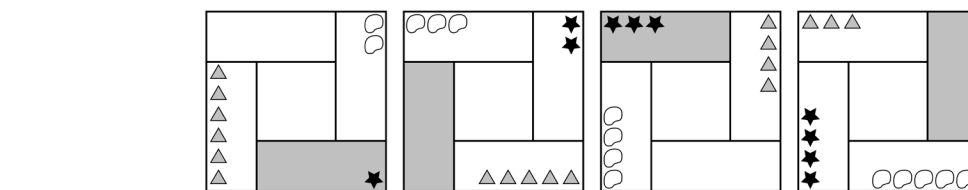
4



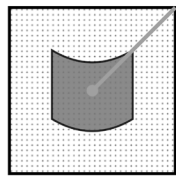
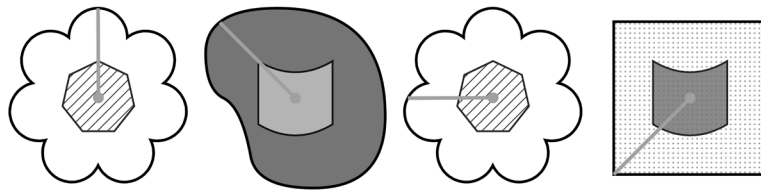
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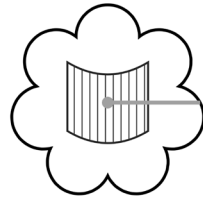
6



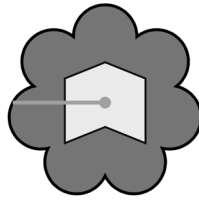
7



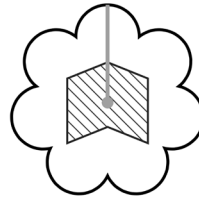
a



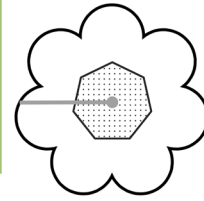
b



c

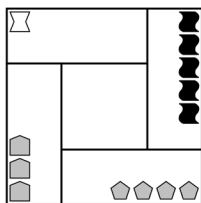
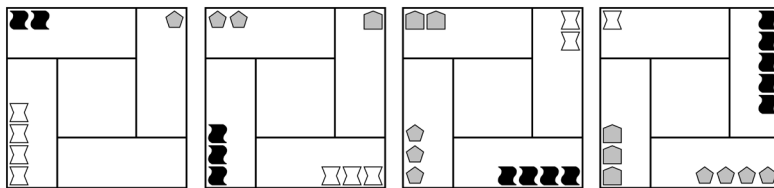


d

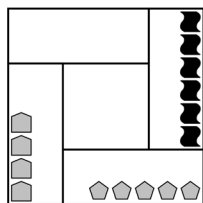


e

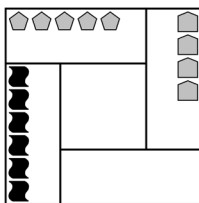
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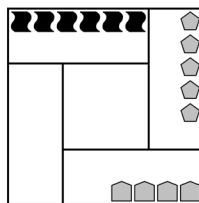
a



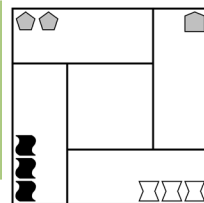
b



c



d



e

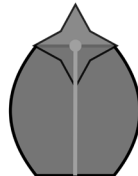
9



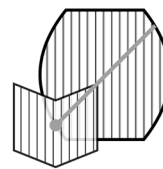
a



b



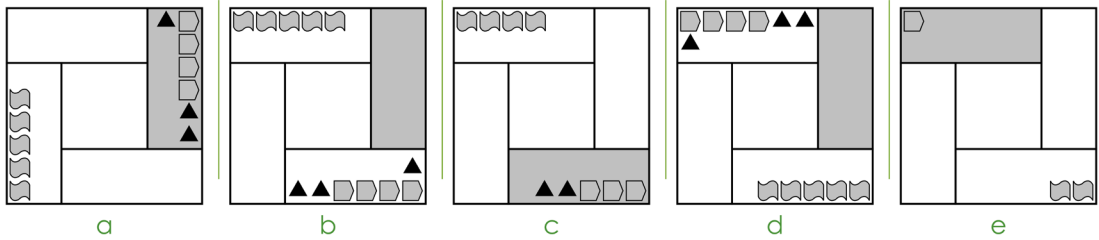
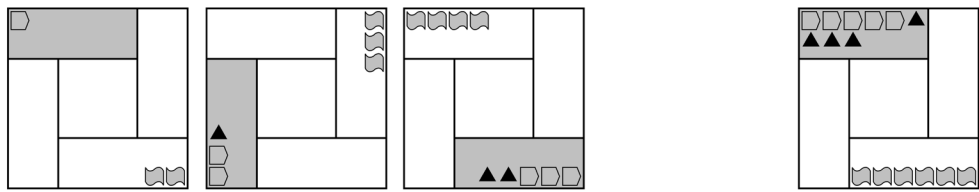
c



d



e



END OF NON-VERBAL REASONING SUBTEST 3.
DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.

Spatial Reasoning Subtest 1 Practice Section

(untimed)

This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

In each question, you are shown a 3D figure made from identical blocks. Some blocks may be hidden from view.

Work out how many individual blocks make up the 3D figure, find the correct number and mark its letter on your answer sheet.

A Example



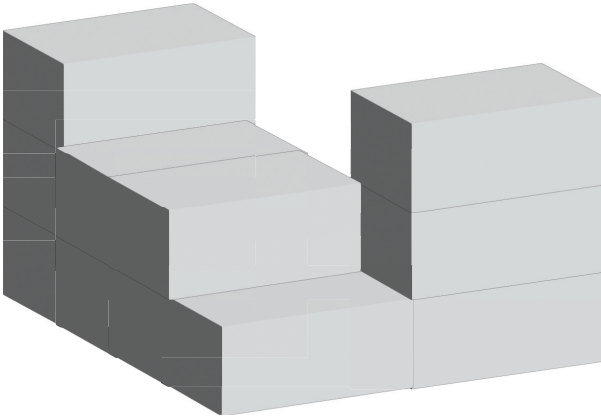
10		11		12		13		14
a		b		c		d		e

The answer is **a**. There are 10 identical blocks that make up this 3D figure.

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

1 Practice

Work out how many individual blocks make up the 3D figure, find the correct number and mark its letter on your answer sheet.



8		10		11		12		13
a		b		c		d		e

2 Practice

Work out how many individual blocks make up the 3D figure, find the correct number and mark its letter on your answer sheet.



9		11		12		14		15
a		b		c		d		e

END OF PRACTICE SECTION

Spatial Reasoning Subtest 1 begins on the next page.

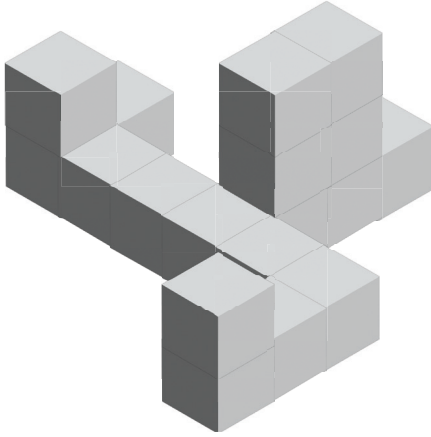
- You have 5 minutes to complete Spatial Reasoning Subtest 1.
- There are 10 questions in this subtest.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

Spatial Reasoning Subtest 1

(5 minutes)

Work out how many individual blocks make up the 3D figure, find the correct number and mark its letter on your answer sheet.

1



18

19

20

21

22

a

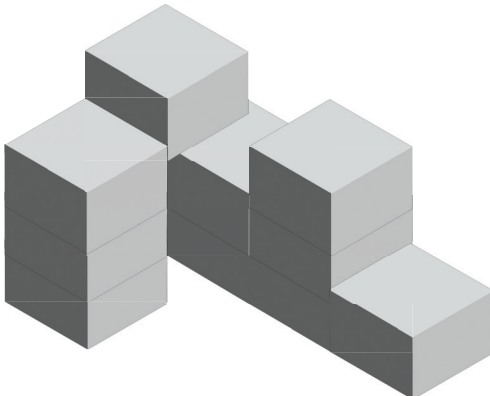
b

c

d

e

2



11

12

14

16

17

a

b

c

d

e

3



7

8

9

11

12

a

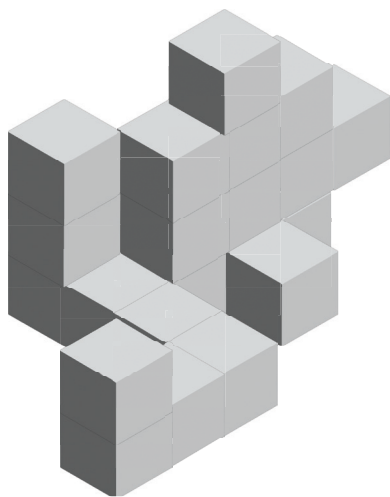
b

c

d

e

4



21

22

23

24

25

a

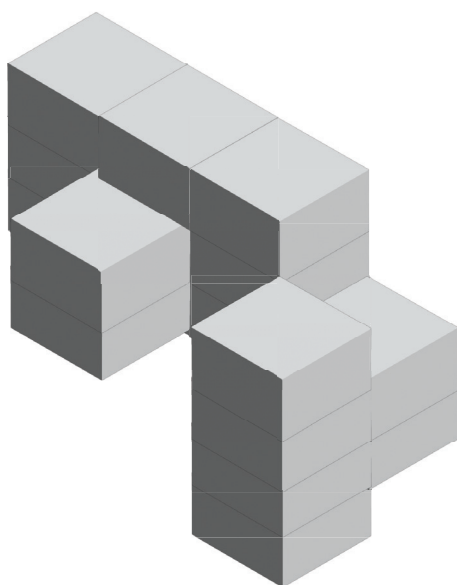
b

c

d

e

5



15

16

17

18

19

a

b

c

d

e

6



4

5

6

7

8

a

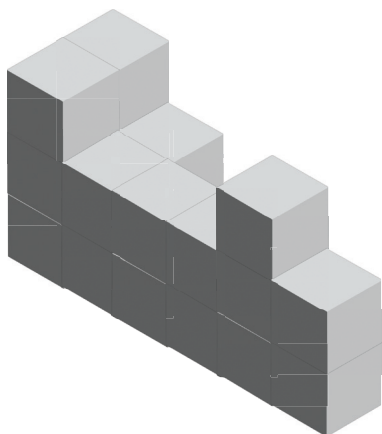
b

c

d

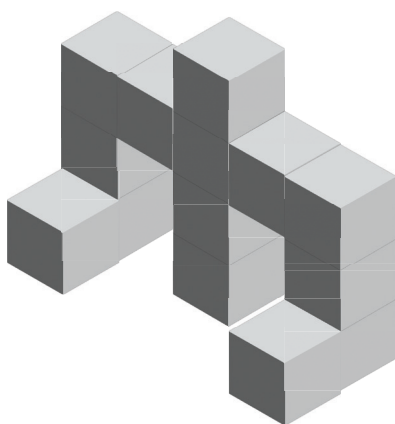
e

7



18		19		20		21		22
a		b		c		d		e

8



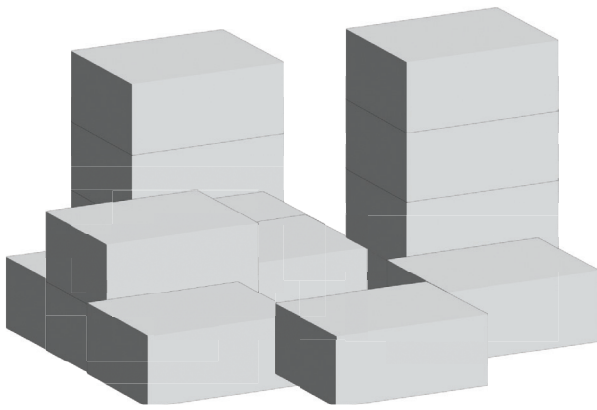
9		10		12		14		16
a		b		c		d		e

9



20		21		22		23		24
a		b		c		d		e

10



14

15

16

17

18

a

b

c

d

e

END OF SPATIAL REASONING SUBTEST 1.

DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.

Spatial Reasoning Subtest 2 Practice Section

(untimed)

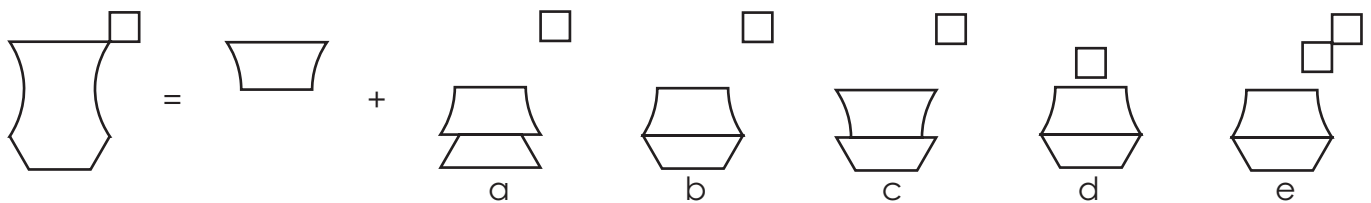
This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

In these questions, the target shape is shown on the far left. Alongside it is one part of the shape.

Decide which of the five shapes, or sets of shapes, on the right needs to be added to that part to make the target shape, and mark its letter on your answer sheet. Be aware that sometimes the correct shape, or set of shapes, may have been rotated to make it harder to find.

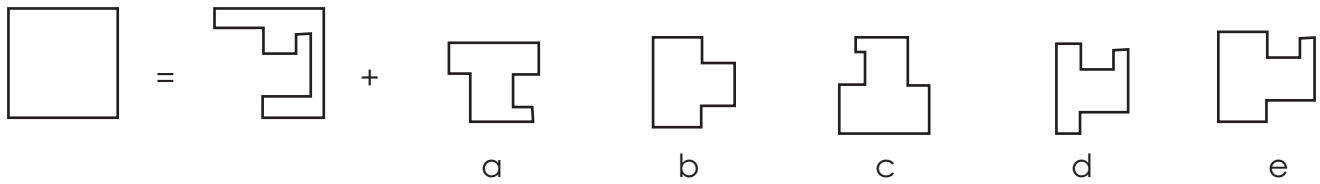
A Example



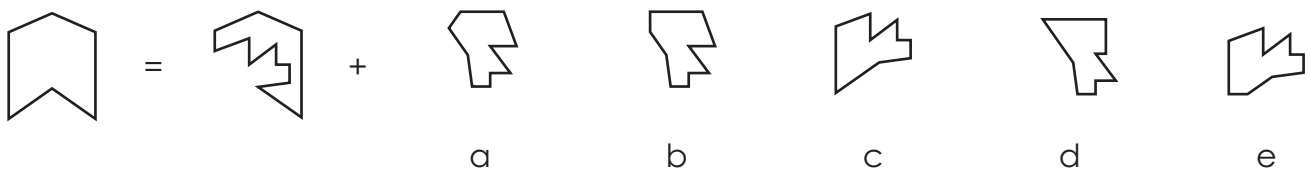
The answer is **b**.

1 Practice

Decide which of the five shapes, or sets of shapes, on the right needs to be added to the partial shape to make the target shape.



2 Practice



END OF PRACTICE SECTION

Spatial Reasoning Subtest 2 begins on the next page.

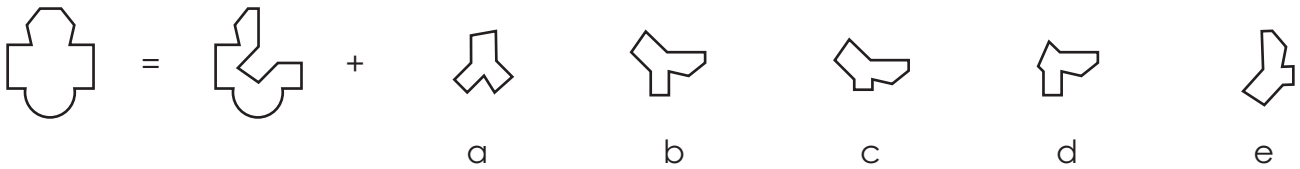
- You have 5 minutes to complete Spatial Reasoning Subtest 2.
- There are 10 questions in this subtest.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

Spatial Reasoning Subtest 2

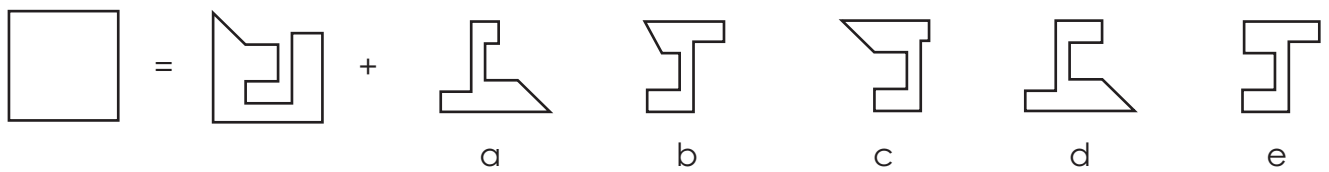
(5 minutes)

Decide which of the five shapes, or sets of shapes, on the right needs to be added to the partial shape to make the target shape. **Mark your answer on the answer sheet.**

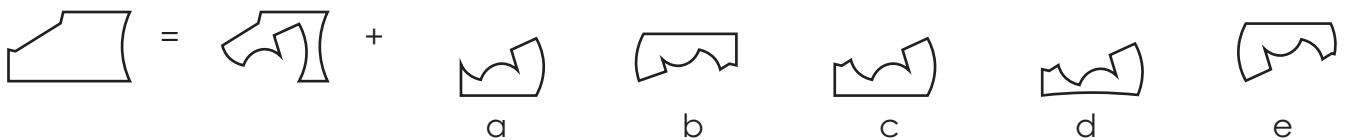
1



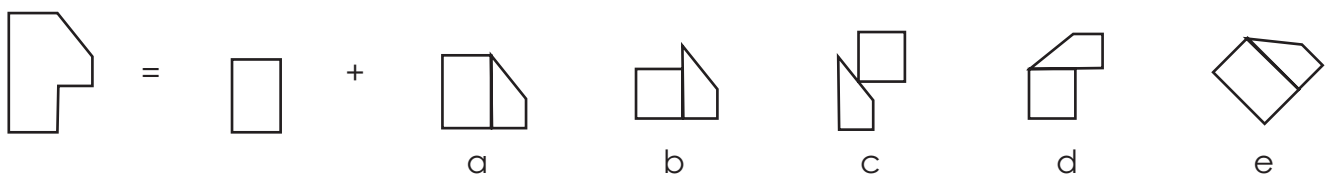
2



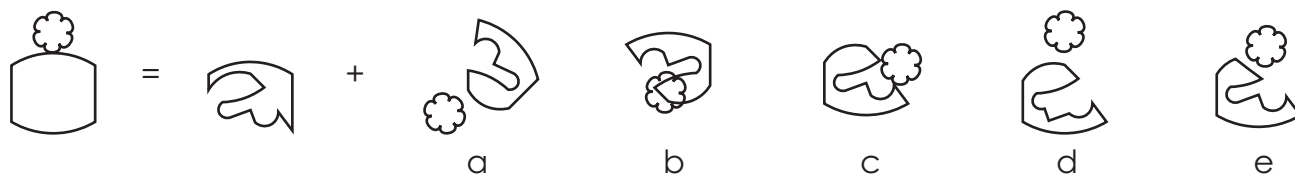
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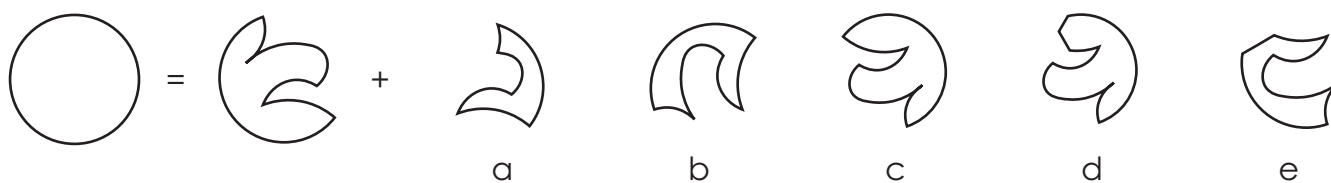
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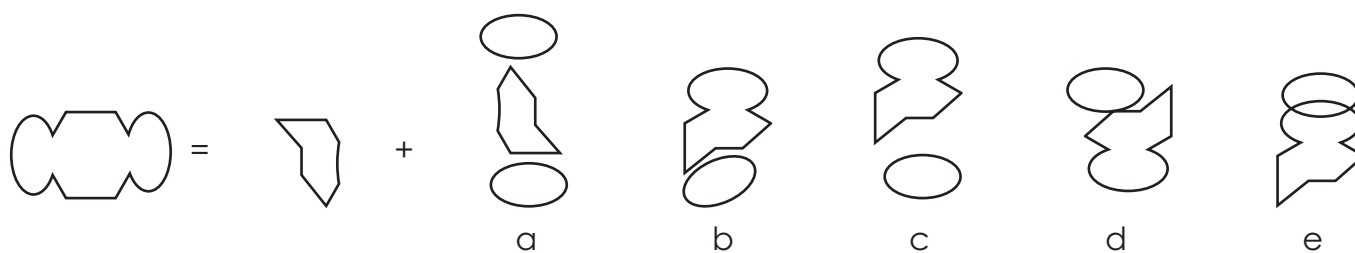
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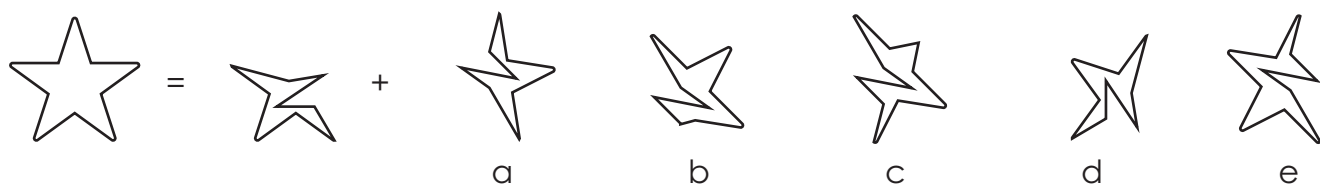
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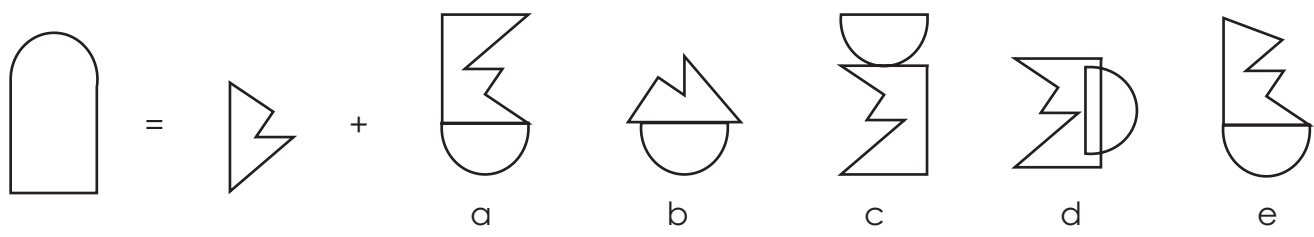


8



9





END OF SPATIAL REASONING SUBTEST 2.
DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.

Maths Practice Section

(5 minutes)

This practice section gives an example of the sort of questions you will be faced with in this test, with the correct answer filled in on the answer sheet so that you can see how to do it.

There are also some practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

Work out the correct answer and mark its letter on the answer sheet.

A Example

I think of a number.
I triple my number and then I subtract 9.
The final result is 30.

A. 39 B. 8 C. 13 D. 16 E. 21

The answer is **13**. You can work this out by working backwards and applying inverse operations. Start with 30 and add 9. This is equal to 39. We now need to divide this number by 3, which makes 13.

The correct answer has been marked on your answer sheet.

Now try these practice questions.

Work out the correct answer and mark it on the answer sheet.

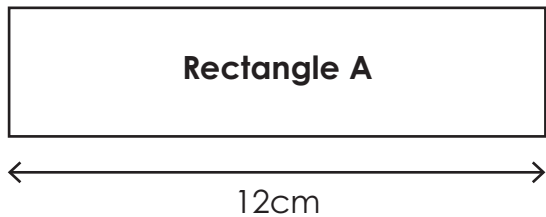
1 Practice

Which of these numbers is NOT a square number?

- A. 16 B. 25 C. 1 D. 49 E. 65

2 Practice

The perimeter of Rectangle A is 32cm. What is the width of the rectangle?



- A. 6cm B. 7cm C. 8cm D. 4cm E. 3cm

END OF PRACTICE SECTION

The maths test begins on the next page.

- You have 25 minutes to complete the maths test.
- There are 25 questions to answer.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

Maths
(25 minutes)

Work out the correct answer and mark its letter on your answer sheet.

- 1** What is the value of 7 in the number 3,472,819?
- A** 700 **B** 7,000 **C** 70,000 **D** 700,00 **E** 7,000,000
-
- 2** A right-angled triangle has a base of 9cm and a height of 14cm.
What is its area?
- A** 63cm² **B** 126cm² **C** 46cm² **D** 23cm² **E** 57cm²
-
- 3** Which option represents the most stickers?
- A** 3 sheets of 24 stickers each.
- B** 2 sheets of 18 stickers and 4 sheets of 12 stickers each.
- C** 4 sheets of 25 stickers and 1 sheet of 16 stickers.
- D** 6 sheets of 20 stickers each.
- E** 5 sheets of 23 stickers each.

- 4** Calculate: $4\frac{2}{3} - 2\frac{3}{4}$
- A** $1\frac{1}{12}$ **B** $2\frac{1}{12}$ **C** $1\frac{5}{6}$ **D** $2\frac{5}{12}$ **E** $1\frac{7}{12}$
- 5** Look at the sequence below.
- 84, 77, 70, ...
- Which term of the sequence will be equal to 0?
- A** 11th **B** 12th **C** 13th **D** 14th **E** 15th
- 6** The length of a rope is 17.83m.
The rope is wound three times around a cylindrical post of circumference 43cm.
What length of rope is left unused?
- A** 16.40m **B** 17.40m **C** 16.68m **D** 15.25m **E** 16.54m
- 7** A car uses 8.4 litres of fuel per 100km. How much fuel will it use on a 350km journey?
- A** 26.6 litres **B** 32.4 litres **C** 25.2 litres **D** 29.4 litres **E** 30 litres
- 8** Anya thinks of a multiple of 17. If she subtracts 9, it becomes a multiple of 12.
What number did Anya think of?
- A** 85 **B** 119 **C** 170 **D** 136 **E** 153

- 9 Order these from smallest to largest:

0.6, $\frac{3}{5}$, $\frac{3}{4}$, 0.58, $\frac{7}{10}$

A 0.58, $\frac{3}{5}$, 0.6, $\frac{7}{10}$, $\frac{3}{4}$

B $\frac{3}{4}$, 0.58, $\frac{3}{5}$, 0.6, $\frac{7}{10}$

C 0.58, 0.6, $\frac{7}{10}$, $\frac{3}{5}$, $\frac{3}{4}$

D $\frac{3}{5}$, 0.58, $\frac{7}{10}$, 0.6, $\frac{3}{4}$

E 0.6, 0.58, $\frac{3}{5}$, $\frac{3}{4}$, $\frac{7}{10}$

- 10 Use the timetable below to answer questions 10 and 11.

If train 1 is delayed by 23 minutes at Ashford and by a further 8 minutes' delay at Maidstone, what time will it arrive at Tonbridge?

Explore Rail – Morning Services			
	Train 1	Train 2	Train 3
Ashford	06:12	07:45	08:30
Maidstone	07:04	08:37	09:22
Tonbridge	07:51	09:24	10:09
London Bridge	09:03	10:36	11:21

A 08:09 B 08:14 C 08:19 D 08:22 E 08:25

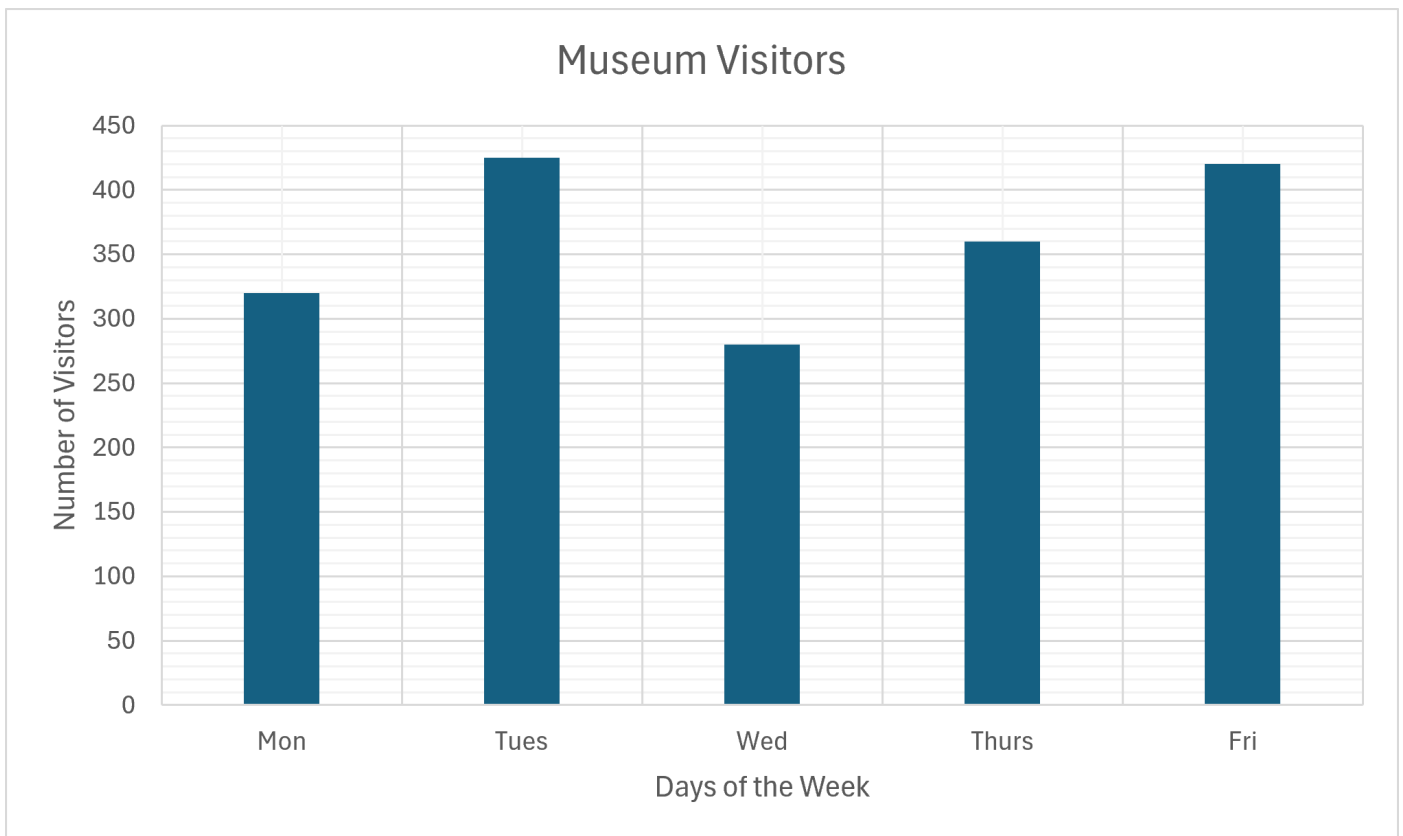
- 11 Priya wants to arrive in London Bridge no later than 11:00. She is at Maidstone. Which is the latest train she can catch?

A Train 1 B Train 2 C Train 3 D Any train E Train 1 and Train 2

- 12** A rectangular fish tank measures $60\text{cm} \times 35\text{cm} \times 40\text{cm}$.
It is filled to $\frac{3}{4}$ of its capacity with water.
How many litres of water does it contain? (1 litre = 1000cm^3)
- A** 63 litres **B** 84 litres **C** 72 litres **D** 56 litres **E** 48 litres
- 13** The thermometer shows -4°C . By midday the temperature has risen by 11°C .
By midnight it falls by 9°C . What is the midnight temperature?
- A** -6°C **B** -2°C **C** 6°C **D** 2°C **E** 4°C

The graph below shows the number of visitors to a museum over five days.

Use the graph to answer questions 14–16.



- 14** How many more visitors went to the museum on Friday than on Wednesday?
- A** 190 **B** 210 **C** 160 **D** 220 **E** 140

15 What is the mean number of daily visitors?

- A** 375 **B** 383 **C** 361 **D** 363 **E** 353

16 What is the range of the number of daily visitors?

- A** 195 **B** 214 **C** 120 **D** 145 **E** 136

17 Calculate: 15.6×8.5

- A** 130.6 **B** 132.6 **C** 133.2 **D** 134.6 **E** 131.2

18 Find 12% of £345.

- A** £39.40 **B** £41.40 **C** £43.80 **D** £40.60 **E** £38.90

19 A cinema has 24 rows. The first 8 rows each have 15 seats. The remaining rows each have 18 seats. How many seats are there in total?

- A** 408 **B** 420 **C** 288 **D** 312 **E** 432

- 20** What is the value of k in: $5k^2 = 125$?
- A** 3 **B** 4 **C** 5 **D** 6 **E** 25
- 21** A shop reduces a jacket priced at £85 by 35%. A week later the reduced price is increased by 20%. What is the final price?
- A** £62.40 **B** £55.25 **C** £66.30 **D** £63.75 **E** £68.00
- 22** $5^2 + 2^3 + 3 = x^2$
- What is the value of x ?
- A** 5 **B** 6 **C** 7 **D** 8 **E** 9
- 23** Three friends buy lunch. Kim spends £2 more than Lena. Tom spends twice as much as Lena. Together they spend £22. How much does Kim spend?
- A** £5 **B** £6 **C** £7 **D** £8 **E** £9

- 24** Three water bottles have different capacities. Each bottle is a different price.



Which bottle has the lowest capacity per pound (£)?

- A** Bottle X **B** Bottle Y **C** Bottle Z **D** Both X and Z **E** Both Y and Z

- 25** A computer program carries out the following steps:

If (old) number < 150, then (new) number = (old) number $\times$ 2
Print (new) number (on the screen)
Repeat the calculation steps

When the program repeats, the (new) number becomes the (old) number for the next cycle.

If Priya inputs the (old) number 17, what is the 3rd number she will see on the screen?

- A** 34 **B** 119 **C** 272 **D** 68 **E** 136

END OF MATHEMATICS TEST.

