

# GL Buckinghamshire Mock 1

## 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 sheet provided.

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



# Non-Verbal Reasoning Subtest 1

## Practice Section

(Untimed)

This practice section gives an example of the sort of question you will be faced with in Non-Verbal Reasoning Subtest 1 with the correct answer filled in on the answer sheet so that you can see how to do it.

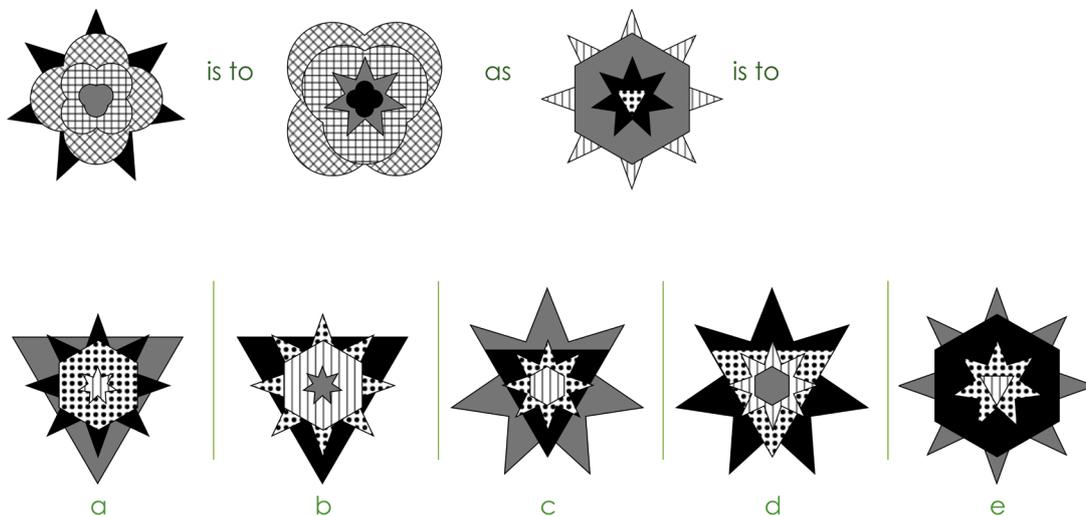
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

On the left there are two shapes with the words 'is to' between them. You must work out how the second shape is related to the first.

After these, there is a third shape, followed by the words 'is to', and five possible answer options. You must work out which of the five figures goes with the third to make a pair like the two on the left.

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

### A Example

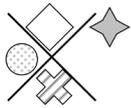
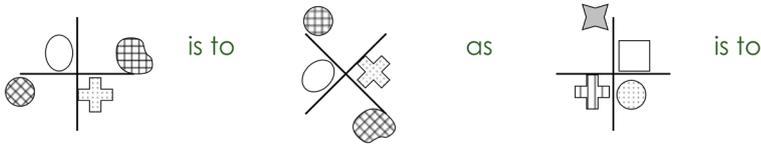


The answer is **C**. In the example, the black outer star in the first figure becomes the second layer in the second figure. It takes on the shading of the centre shape from the first figure. The diagonal hashed flower shape in the first figure, moves to the centre position in the second figure and takes on the shading of the black outer star. The hashed flower shape in the first figure, becomes the outer shape, and takes on the shading of the third layer from the centre. The centre shape becomes the third layer and takes the shading of the second layer from the first figure. If we apply these same rules to the third figure, then the answer is C.

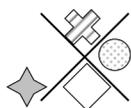
Now try the practice questions and mark your answers on the answer sheet.

## 1 Practice

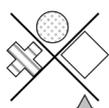
Choose the figure that completes the sentence in the best way.



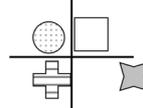
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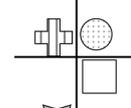
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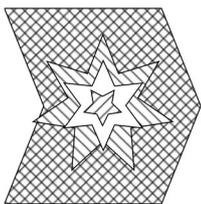
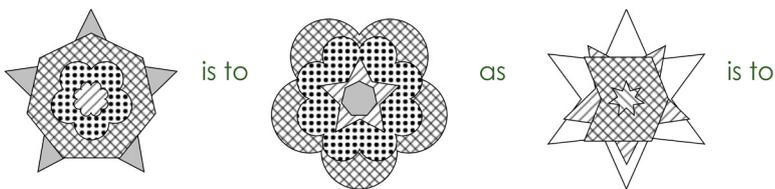
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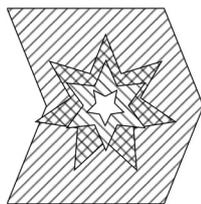
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## 2 Practice

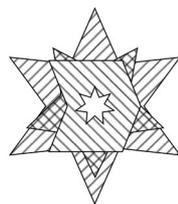
Choose the figure that completes the sentence in the best way.



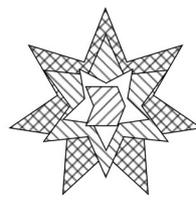
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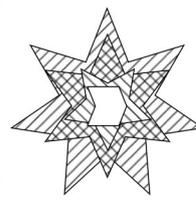
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d



e

## **END OF PRACTICE SECTION**

**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 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.**

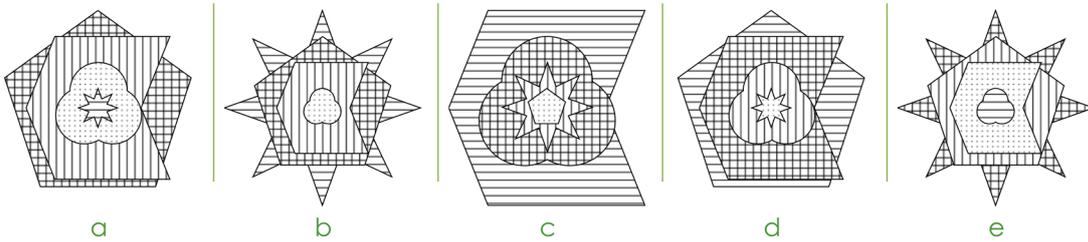
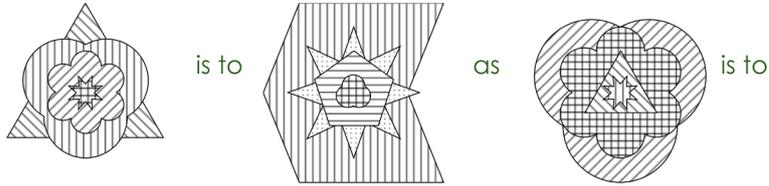
# Non-Verbal Reasoning Subtest 1

(5 minutes)

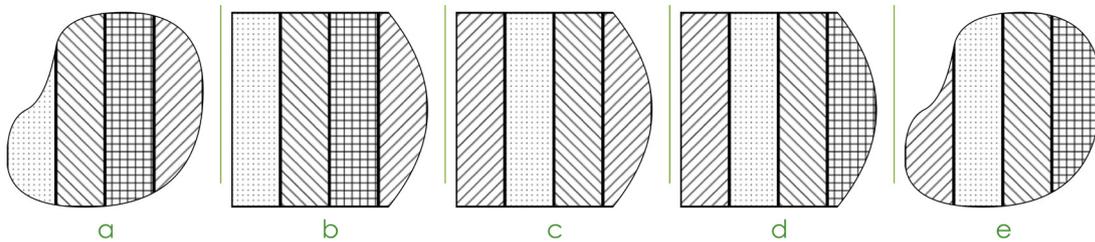
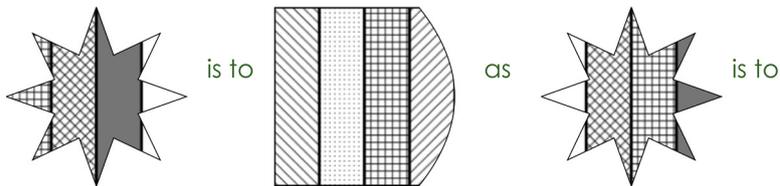
Work out the correct answer and mark its letter on your answer sheet.

Choose the figure that completes the sentence in the best way.

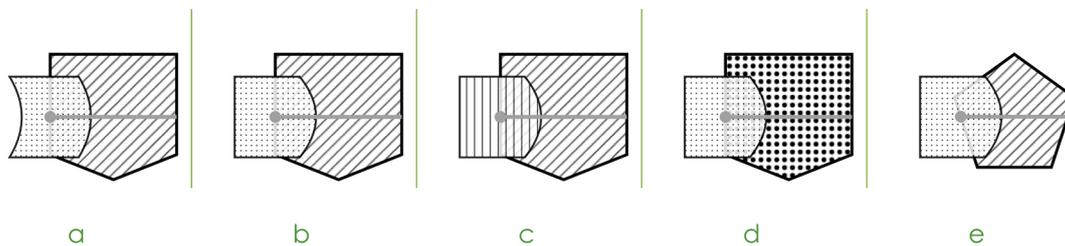
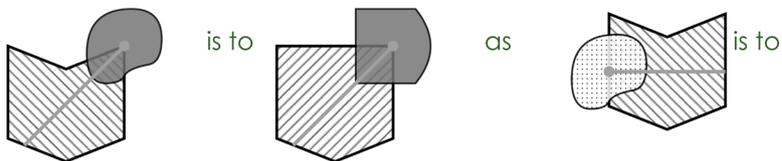
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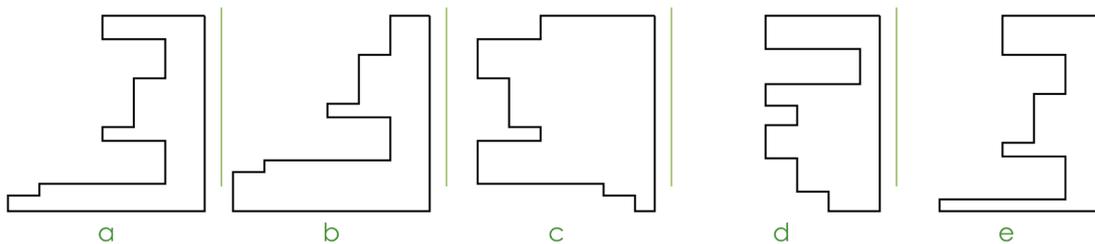
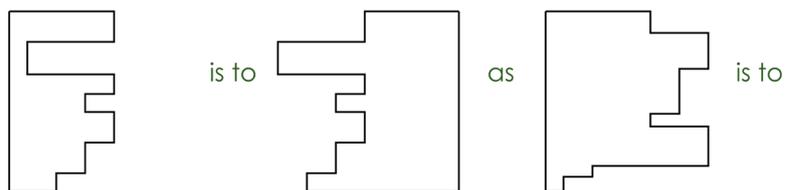
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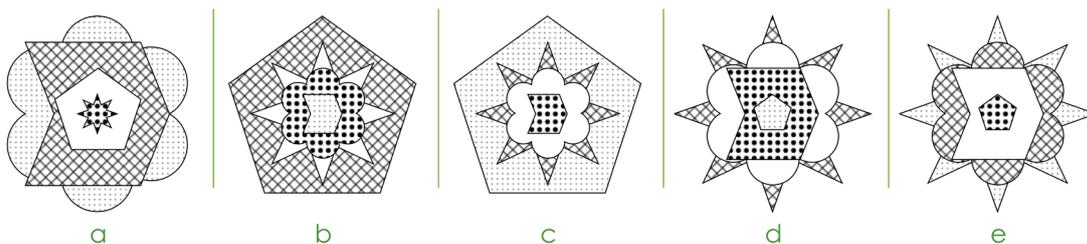
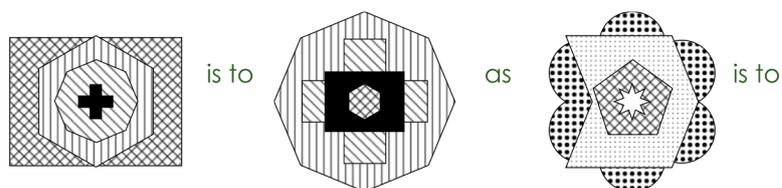
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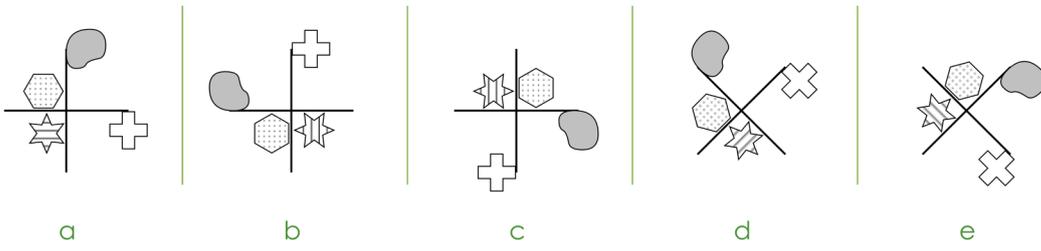
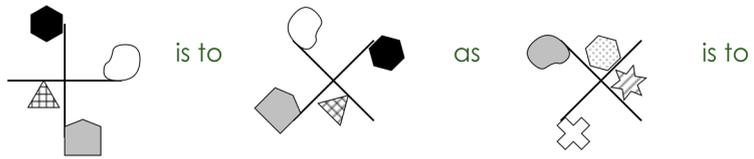
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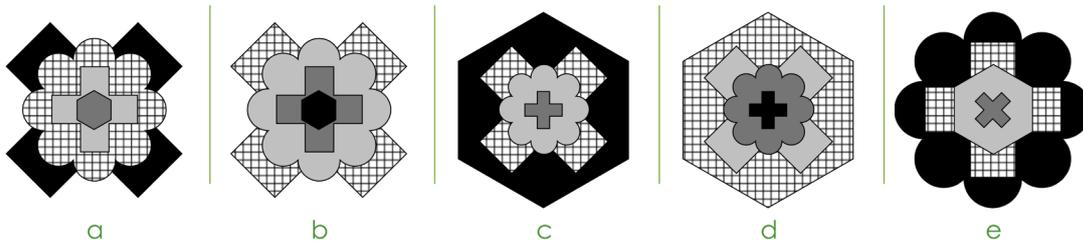
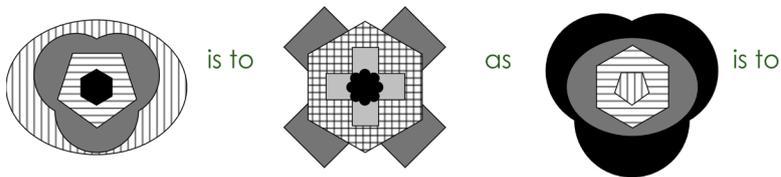
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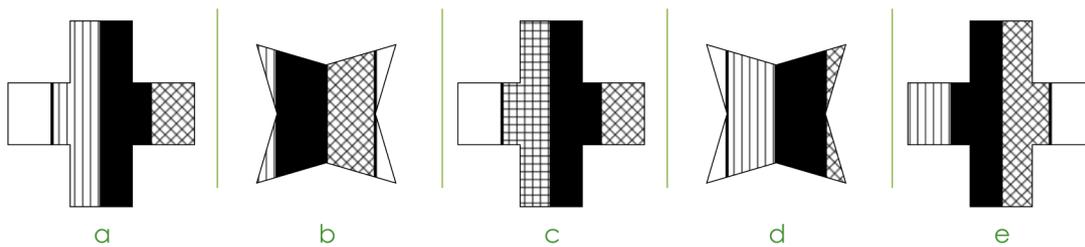
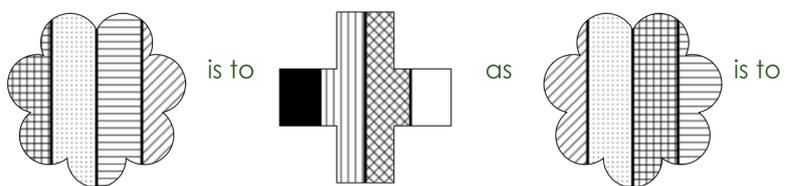
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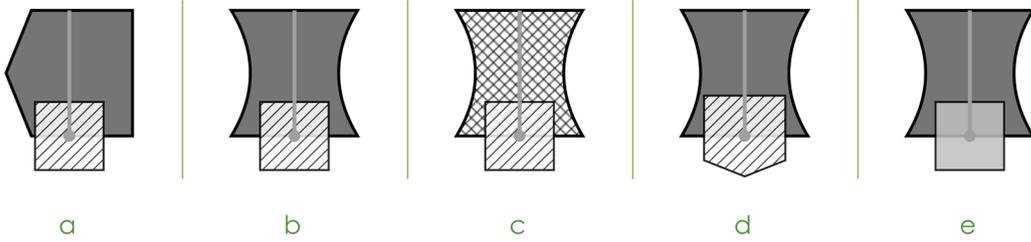
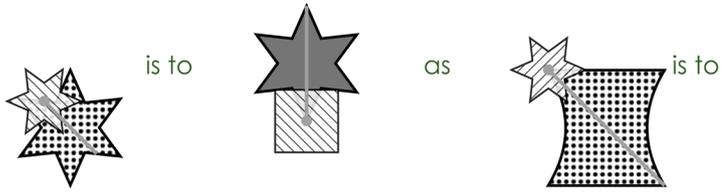
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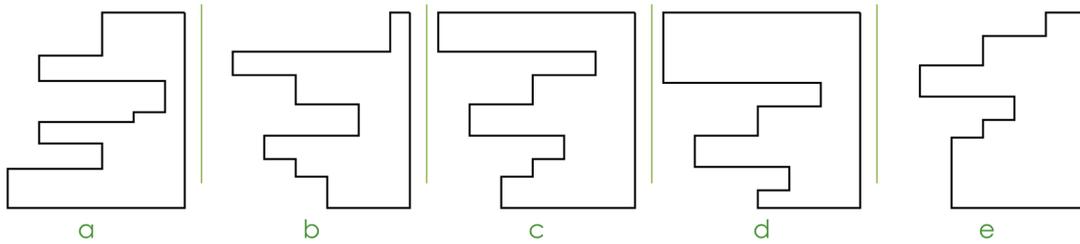
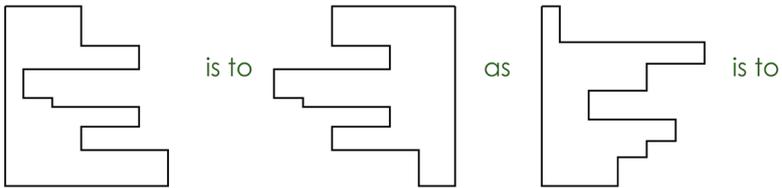
8



9



10



**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 Section

(Untimed)

This practice section gives an example of the sort of question you will be faced with in Non-Verbal Reasoning Subtest 2, with the correct answer filled in on the answer sheet so that you can see how to do it.

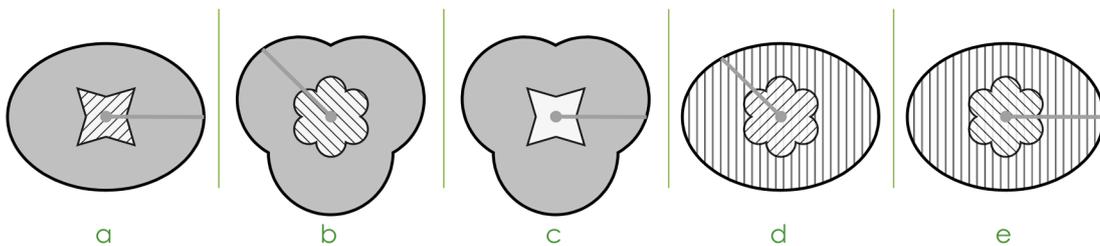
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

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In these questions, there are five figures. You must work out which is most unlike the other four and mark its letter on your answer sheet.

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

### A Example

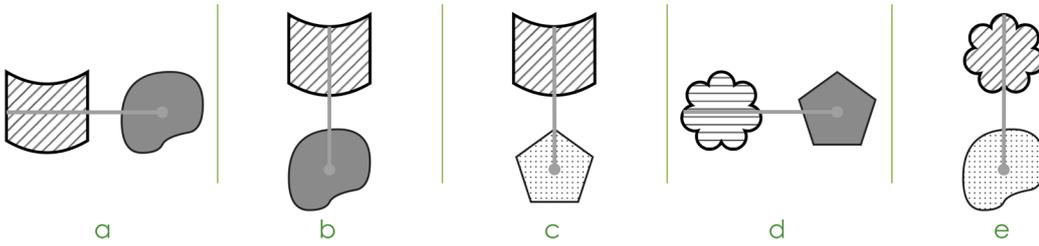


The answer is **C**. C is the only figure where the inside shape has a different shading to the other four answer options, making this the odd figure out.

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

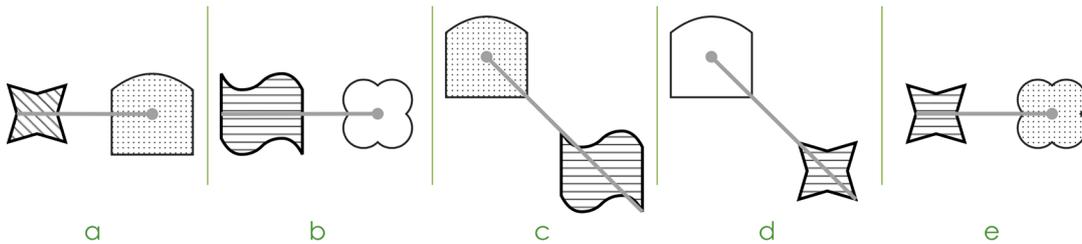
## 1 Practice

Choose the figure that is the odd one out.



## 2 Practice

Choose the figure that is the odd one out.



## END OF PRACTICE SECTION

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

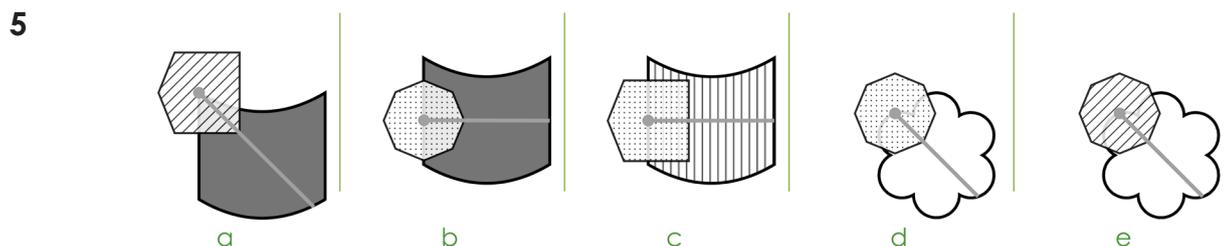
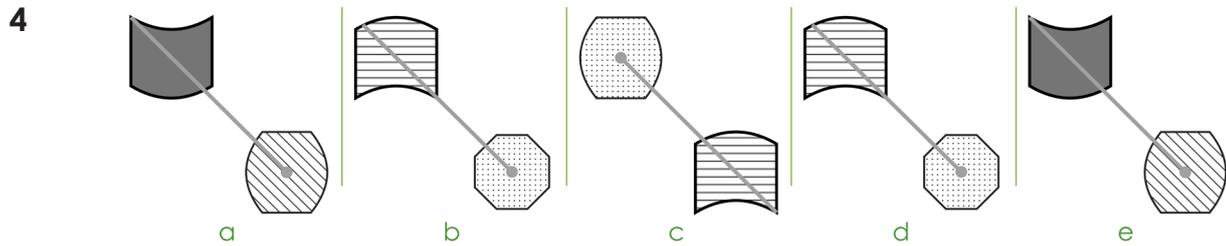
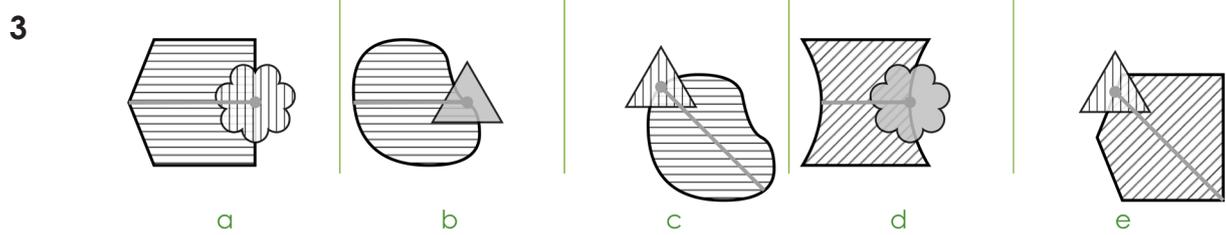
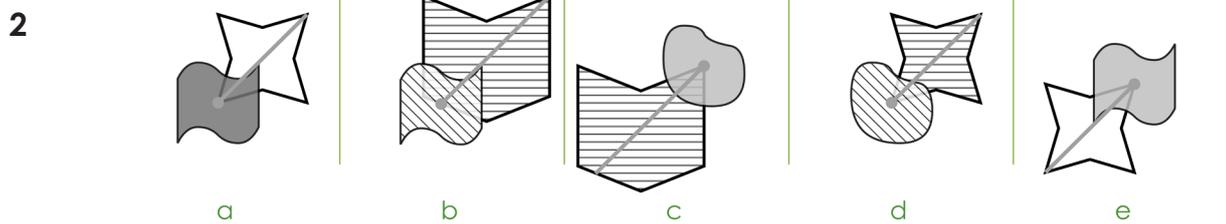
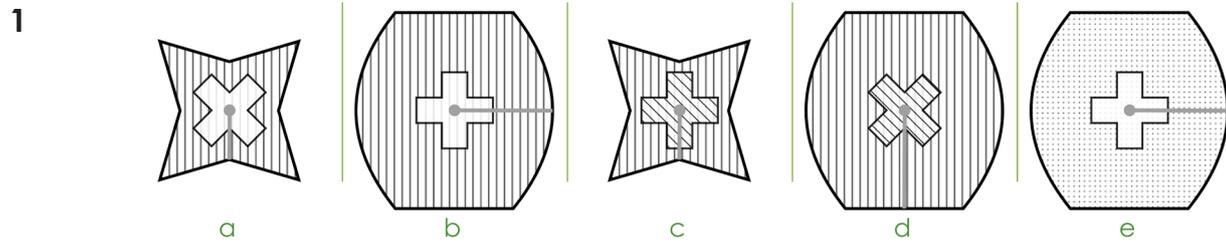
- You have 5 minutes to complete Non-Verbal Reasoning Subtest 2.
- There are 10 questions in this subtest.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

## Non-Verbal Reasoning Subtest 2

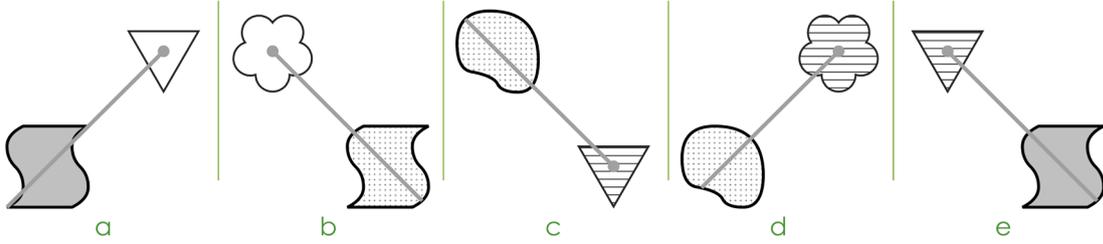
(5 minutes)

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

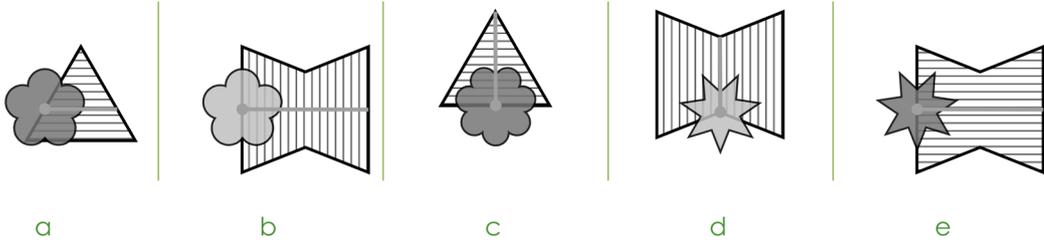
Choose the figure that is the odd one out.



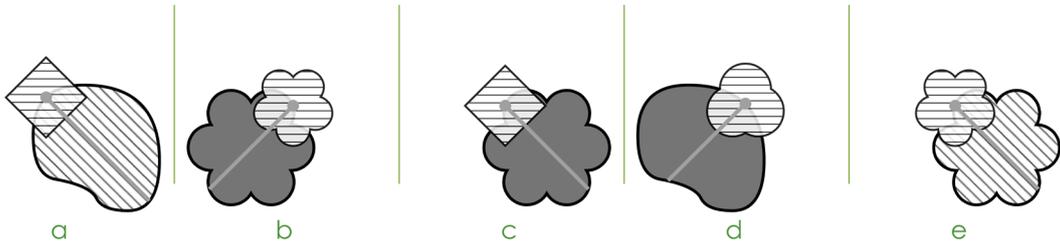
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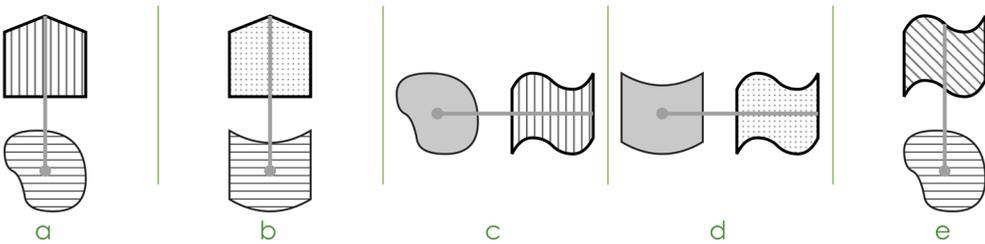
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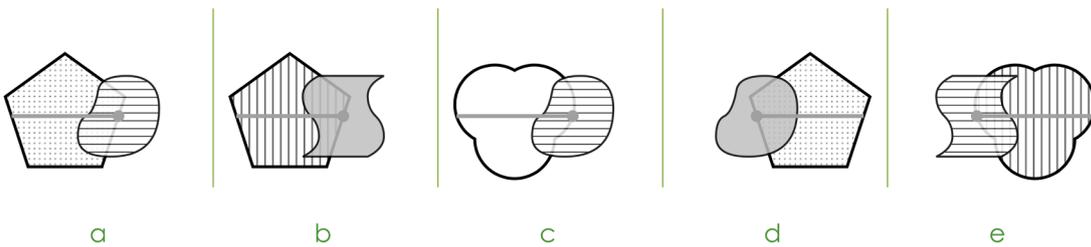
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**END OF NON-VERBAL REASONING SUBTEST 2.**  
**DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.**

# 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.

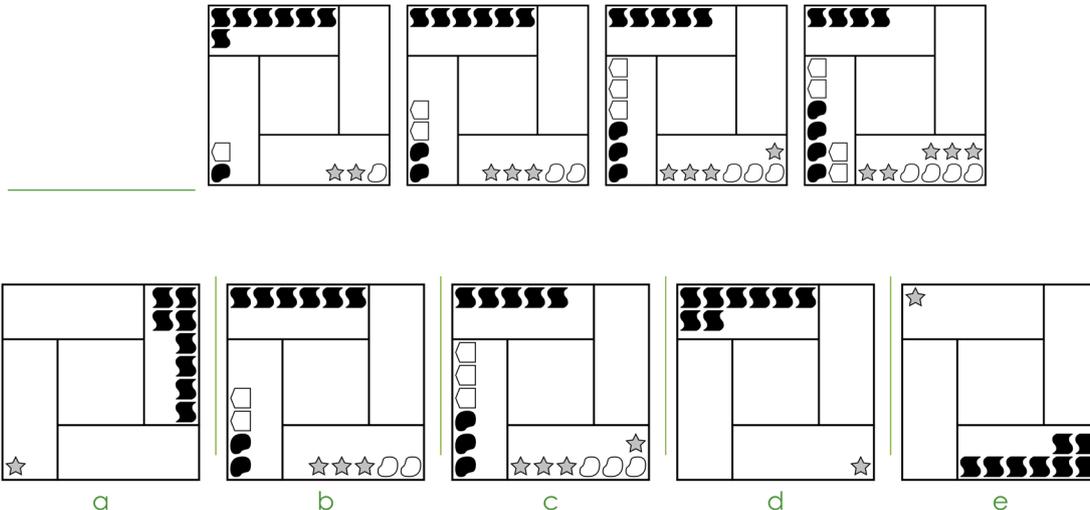
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

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

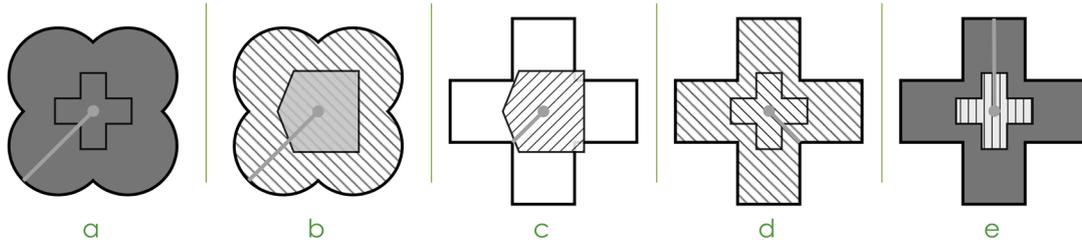


The answer is **d**. The solid black flag shape, presented horizontally in the top rectangle is decreasing by one each time. The solid black bean shape and the pentagon shape in the left-hand side rectangle are increasing by one each time. Given that there is only one each of these in the second figure of the series, we know that there must be none in the first figure that is missing. The grey star and white bean shape in the bottom rectangle are also increasing by one each time. Following these rules, we know that D is the answer and the missing figure from this series.

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

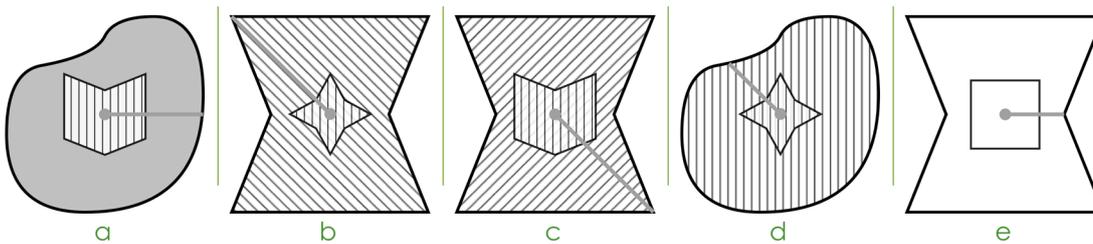
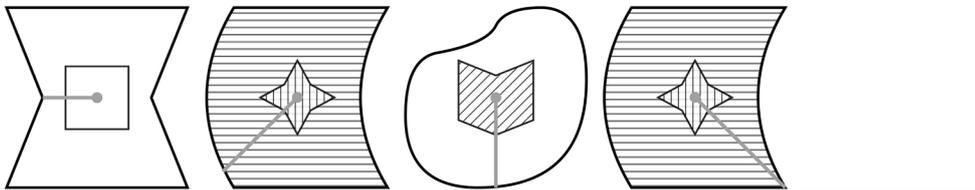
## 1 Practice

Choose the figure that completes the series.



## 2 Practice

Choose the figure that completes the series.



**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.

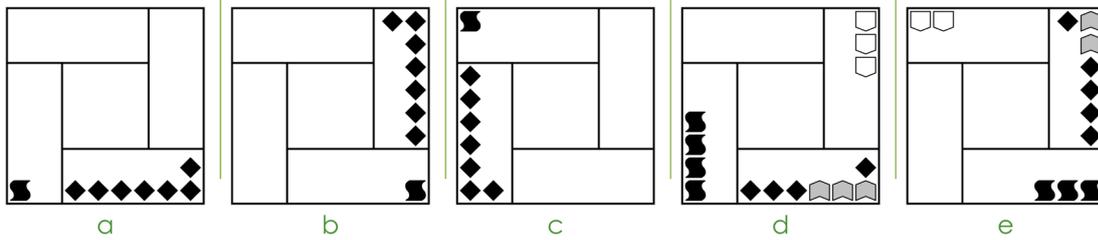
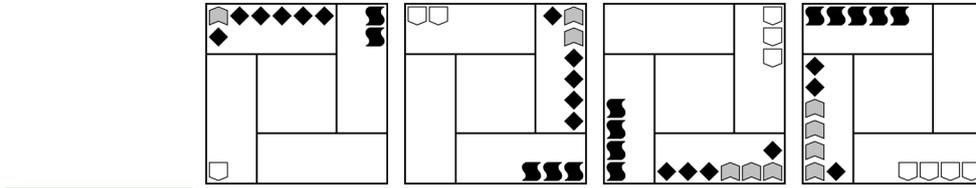
# Non-Verbal Reasoning Subtest 3

(5 minutes)

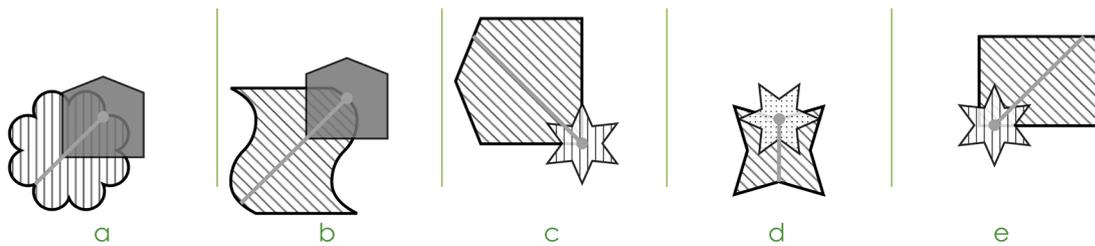
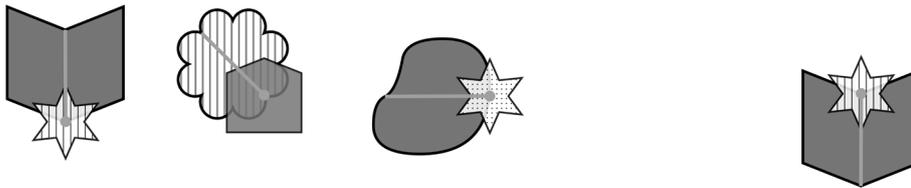
Work out the correct answer and mark its letter on your answer sheet.

Choose the figure that completes the series.

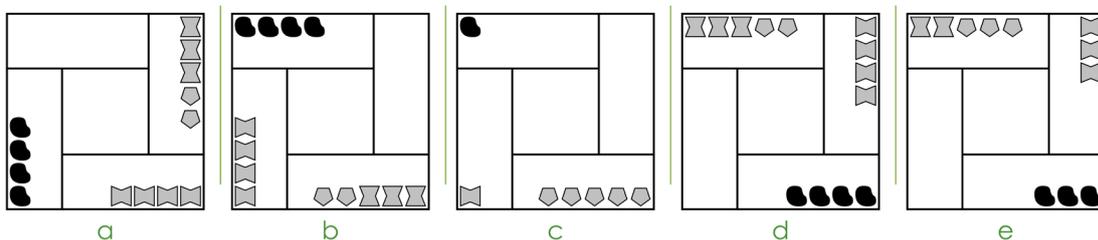
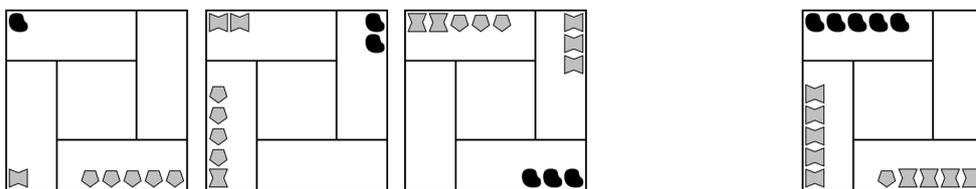
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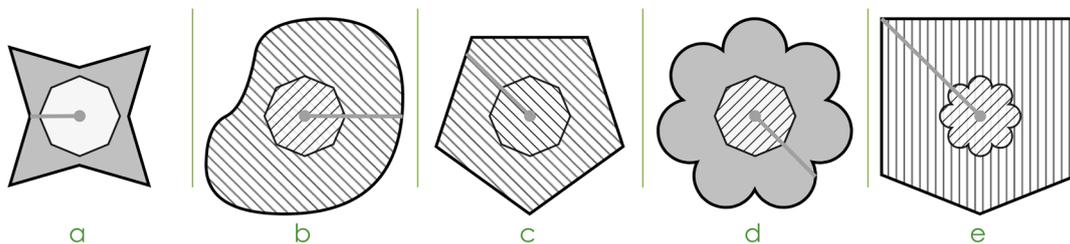
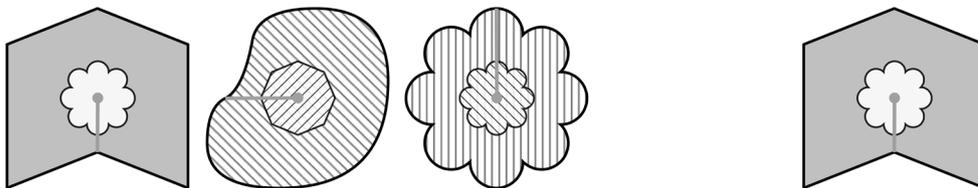
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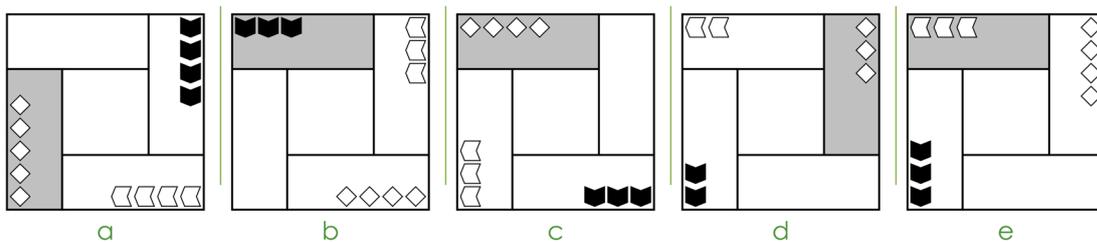
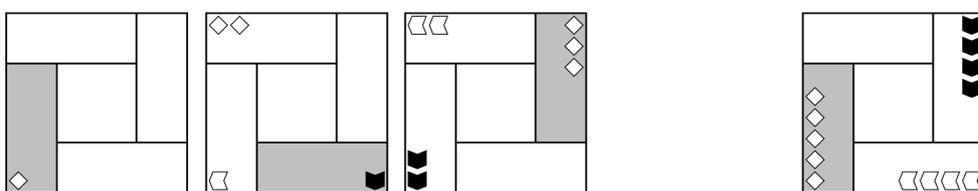
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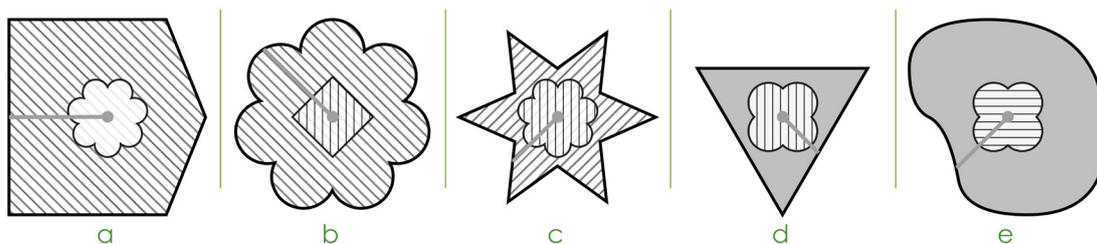
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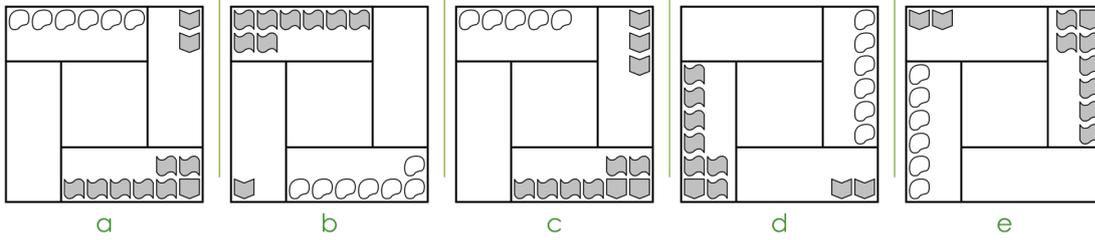
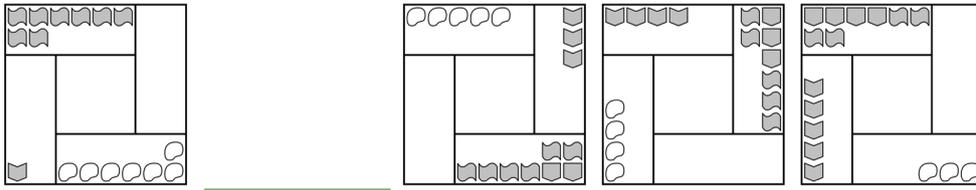
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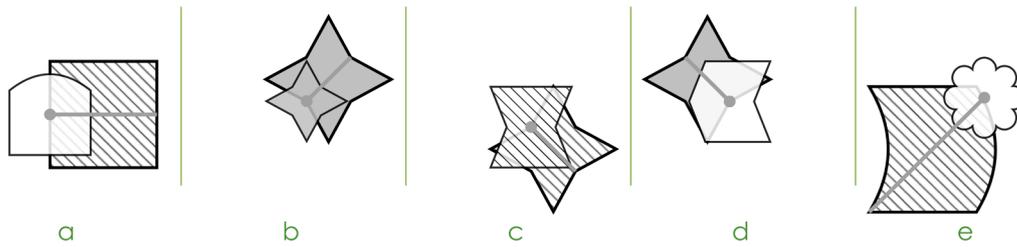
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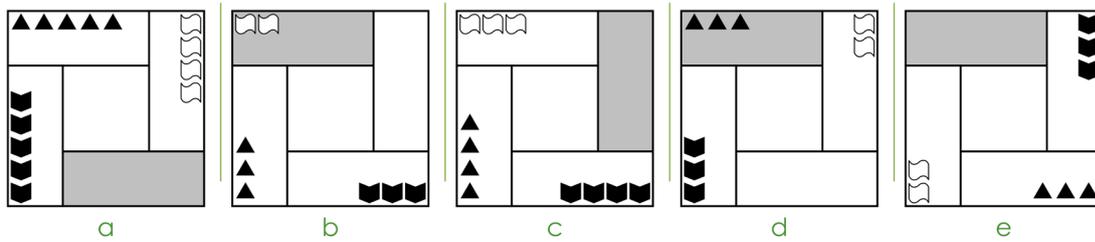
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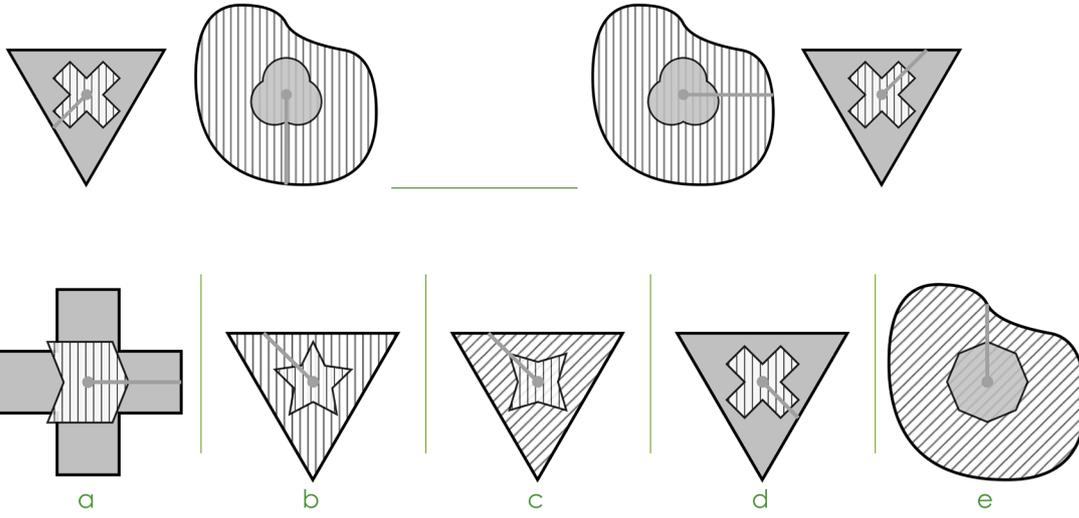


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**END OF NON-VERBAL REASONING SUBTEST 3.  
DO NOT TURN OVER THE PAGE UNTIL YOU ARE TOLD TO DO SO.**

# Spatial Reasoning Subtest 1

## Practice Section

(Untimed)

This practice section gives an example of the sort of question you will be faced with in Spatial Reasoning Subtest 1, with the correct answer filled in on the answer sheet so that you can see how to do it.

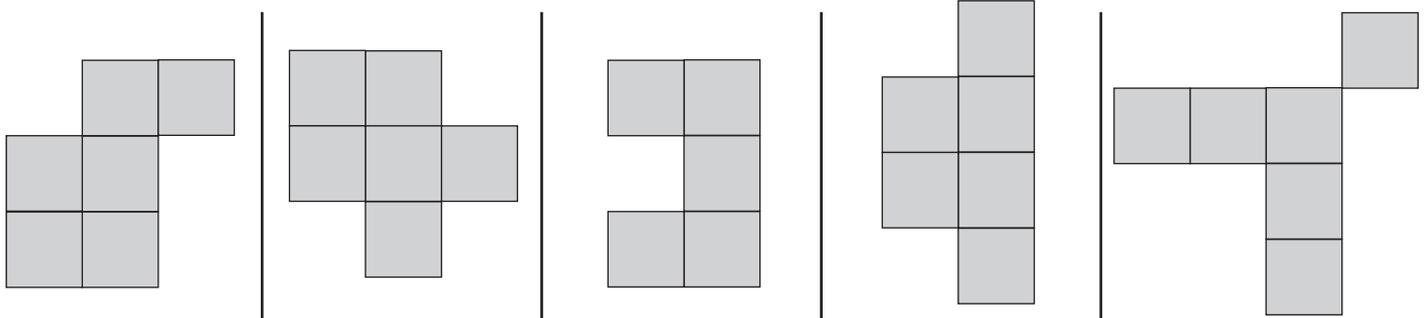
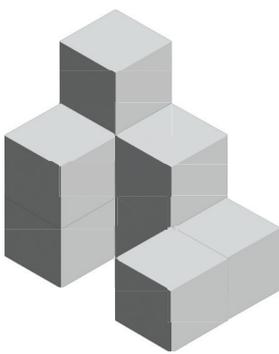
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

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In each question, you are shown a 3D figure made from identical blocks.

Select the option that is the plan view of the 3D shape. Mark its letter on your answer sheet.

### A Example



a

b

c

d

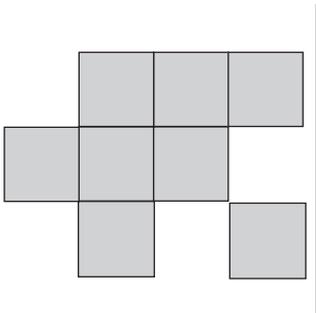
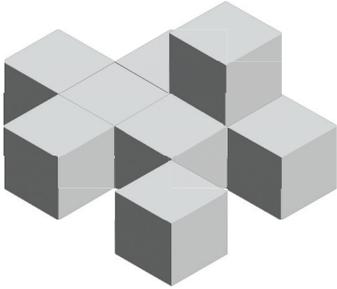
e

The answer is **c**. When looking down on the 3D figure, you would see 3 blocks down the right-hand side with a single block to the top left and bottom left of the row of three blocks. Of course, this plan could look slightly different if rotated due to looking at it from a different angle but the plan view would stay the same.

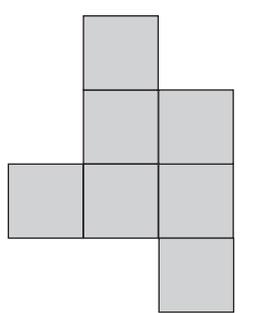
Now try the practice questions and mark your answers on the answer sheet.

## 1 Practice

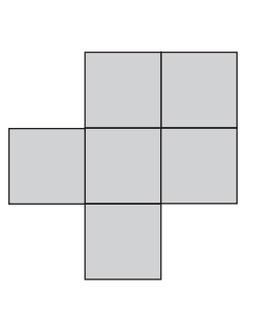
Select the option that is the plan view of the 3D shape.



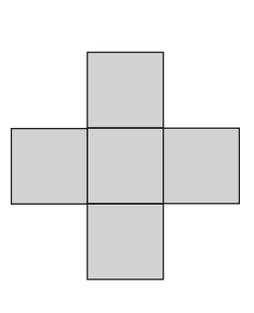
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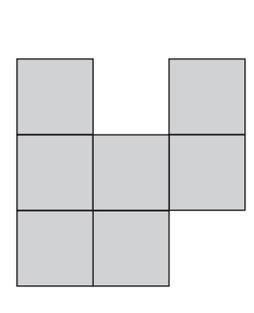
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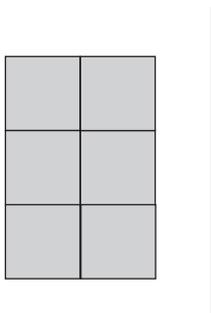
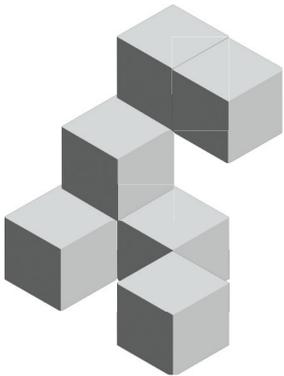
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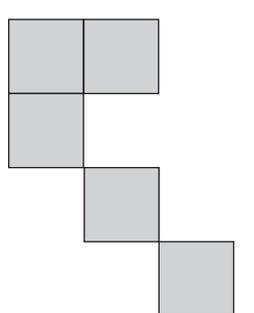
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## 2 Practice

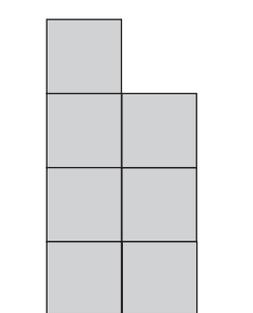
Select the option that is the plan view of the 3D shape.



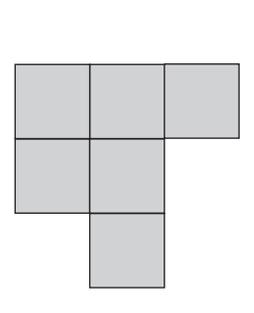
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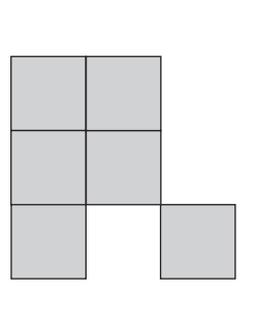
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d



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.**

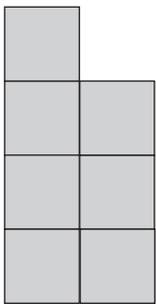
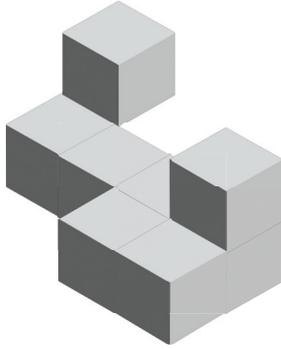
# Spatial Reasoning Subtest 1

(5 minutes)

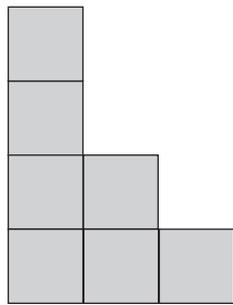
Work out the correct answer and mark its letter on your answer sheet.

Select the option that is the plan view of the 3D shape.

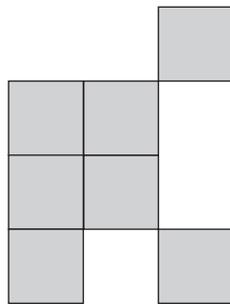
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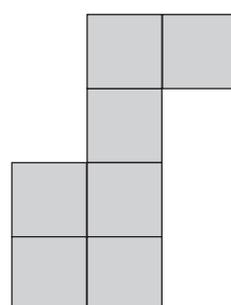
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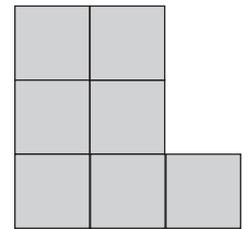
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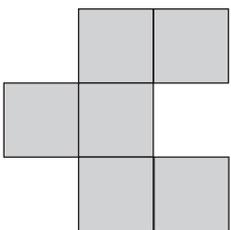
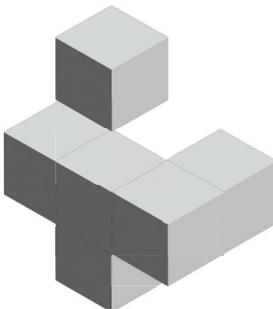


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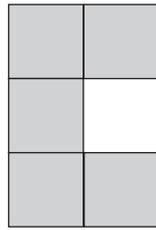


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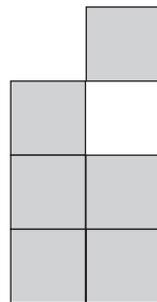
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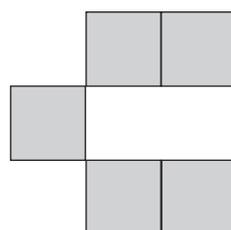
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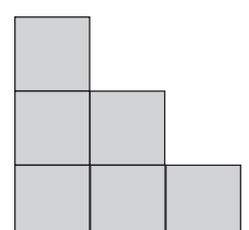
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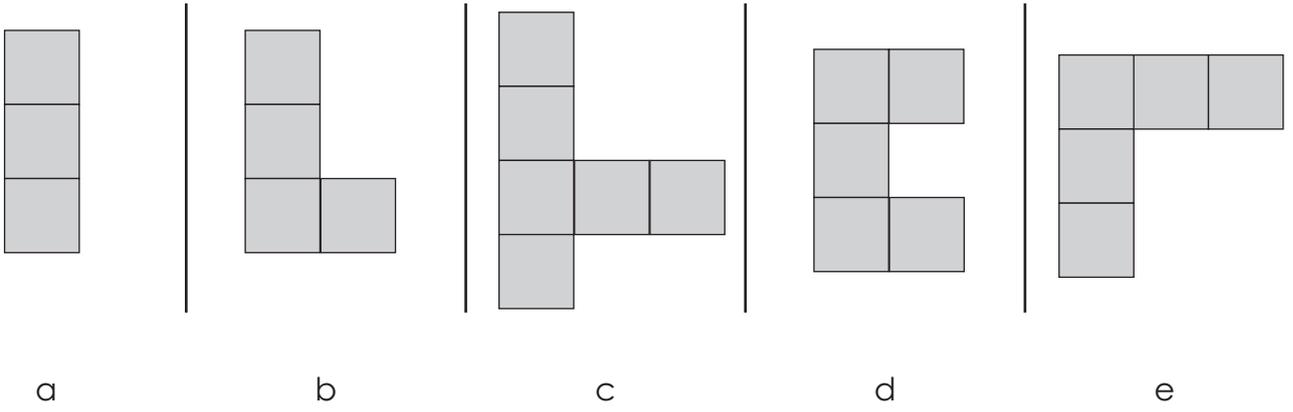


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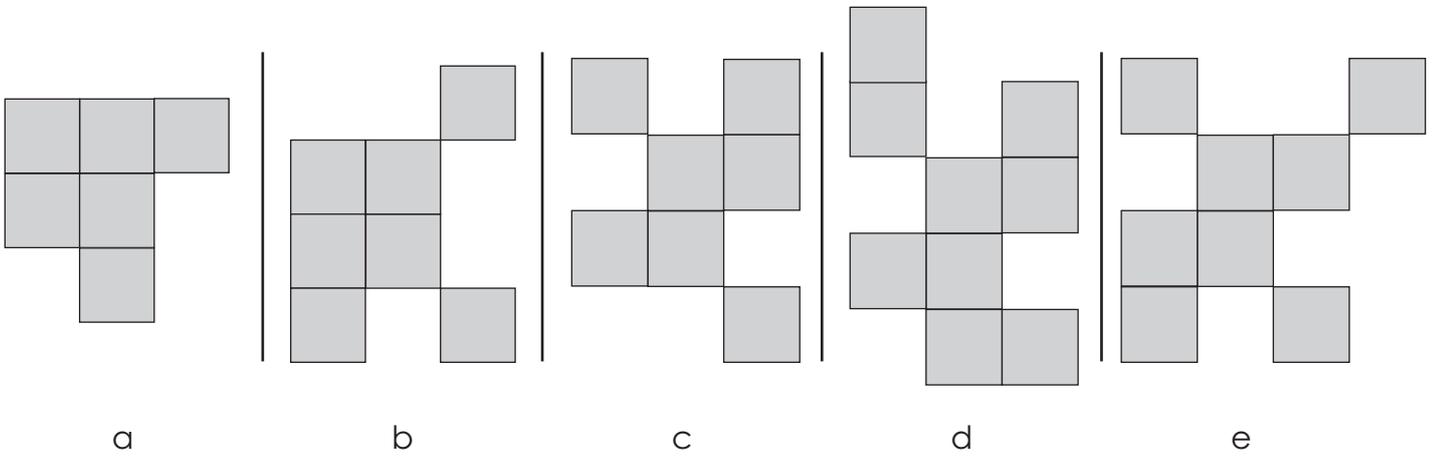
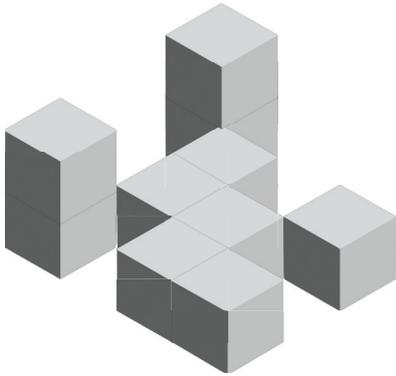


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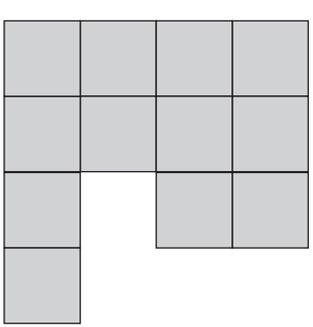
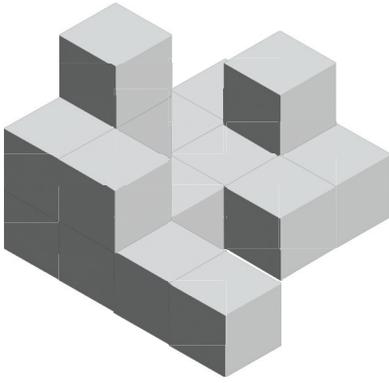
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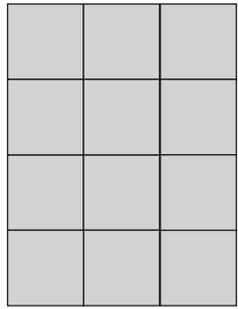
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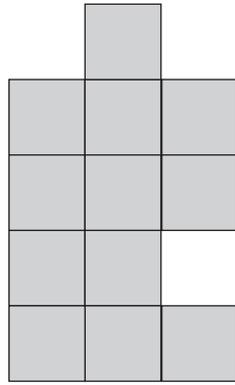
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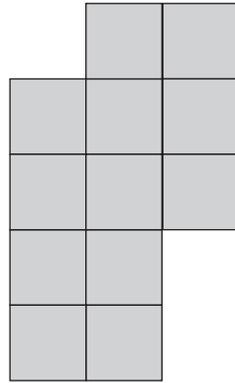
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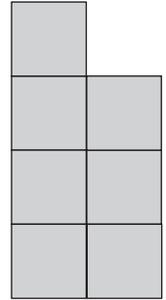
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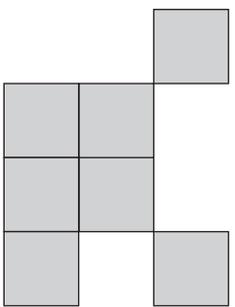
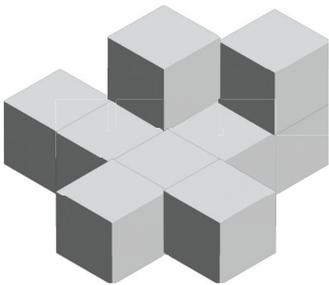


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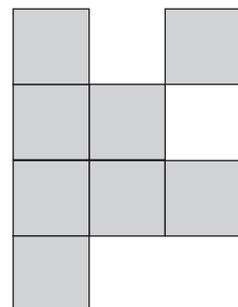


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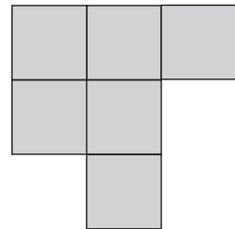
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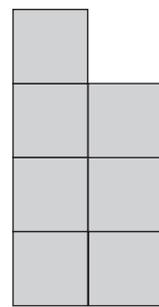
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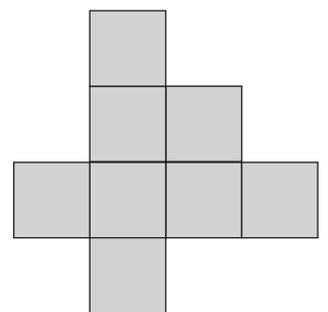
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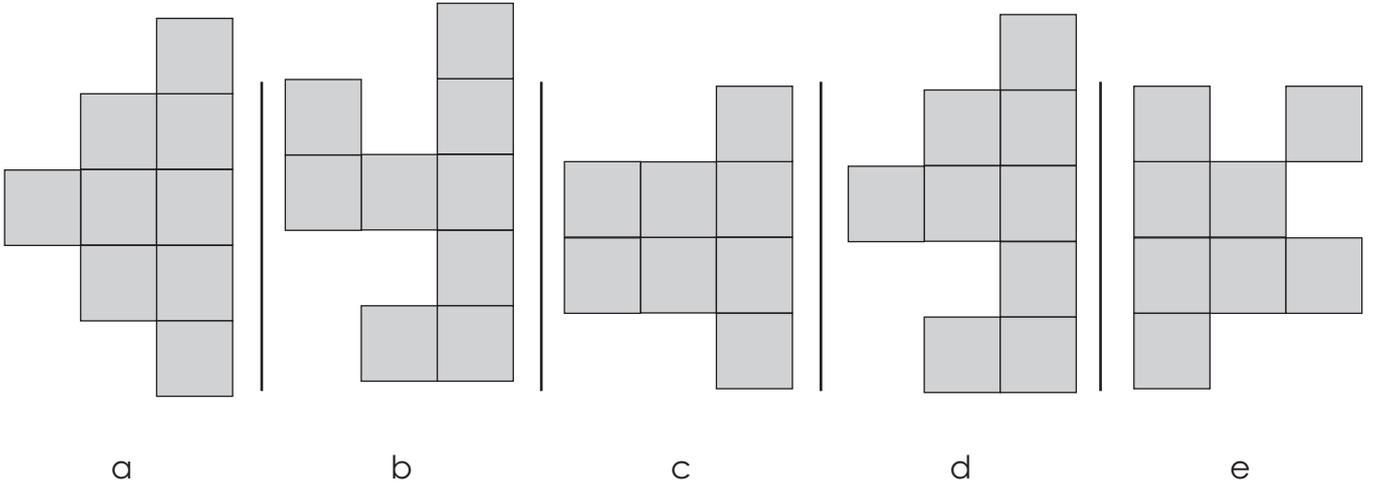
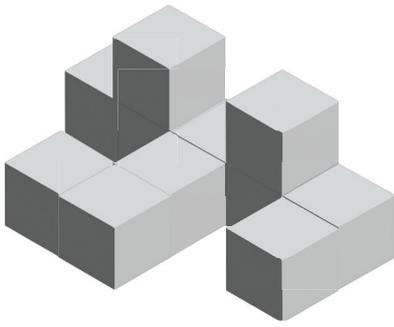


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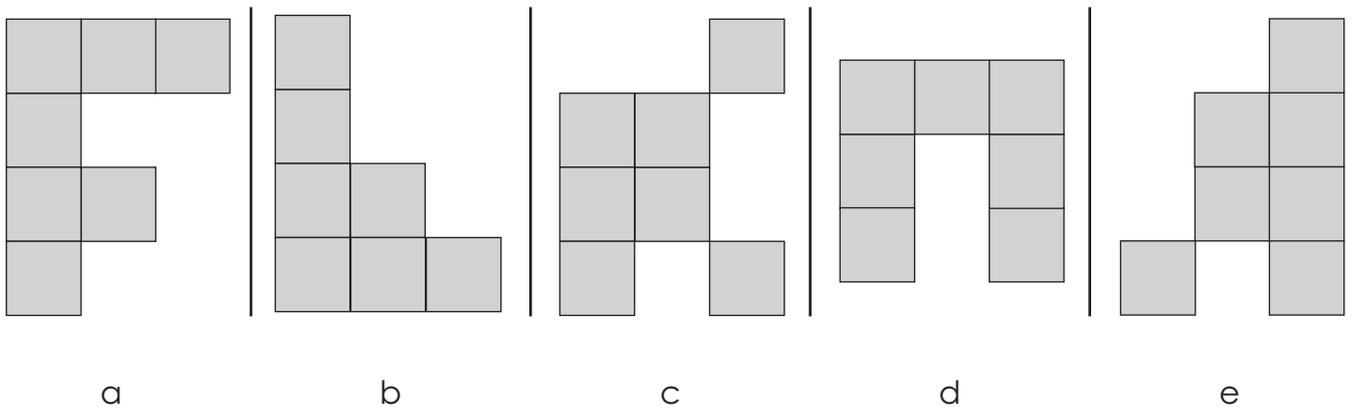
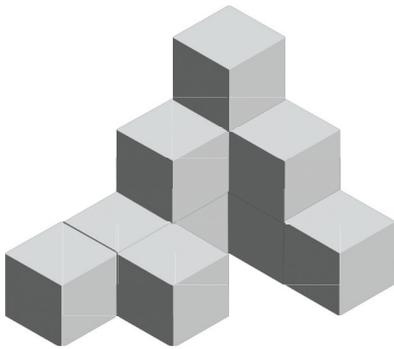


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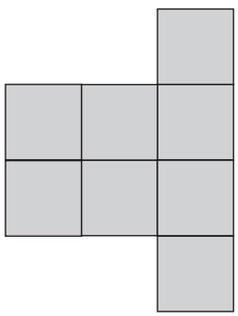
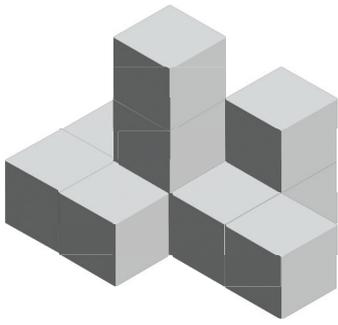
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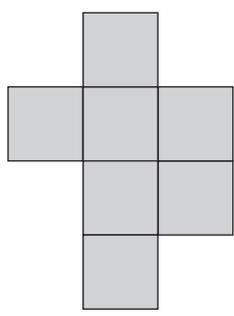
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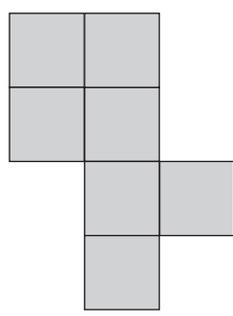
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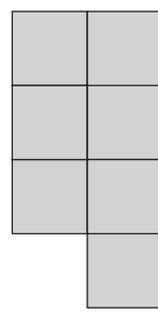
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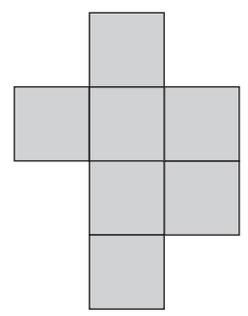
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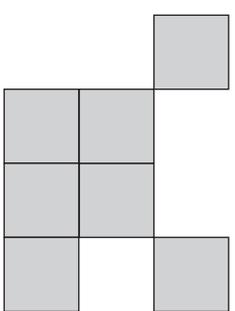
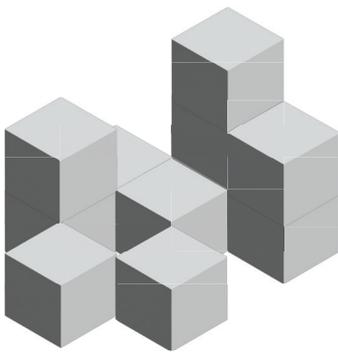


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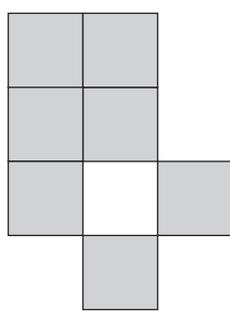


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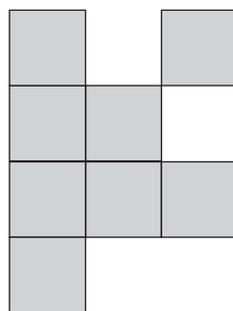
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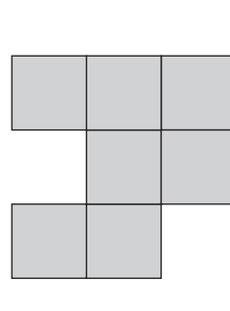
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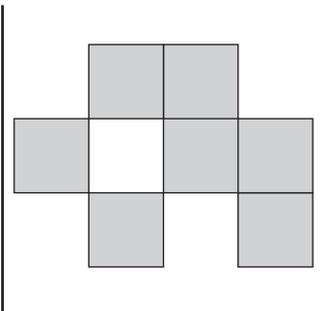
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d



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 question you will be faced with in Spatial Reasoning Subtest 2, with the correct answer filled in on the answer sheet so that you can see how to do it.

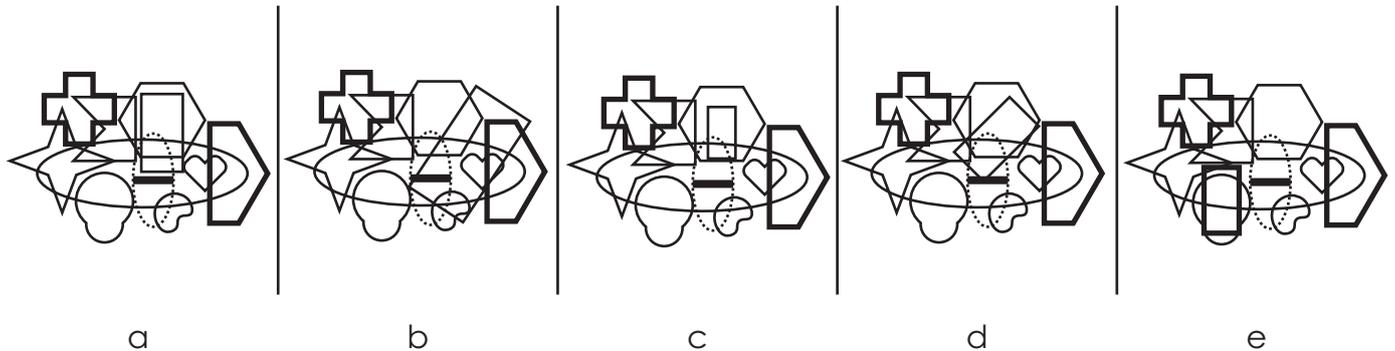
There are also two practice questions that don't have the answers filled in, so that you can practise working them out for yourself and filling in the answer sheet.

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In each question, you are shown a single shape.

Select the option in which this shape is hidden. It will be the same size, but may be rotated. Mark its letter on your answer sheet.

**A**      **Example**

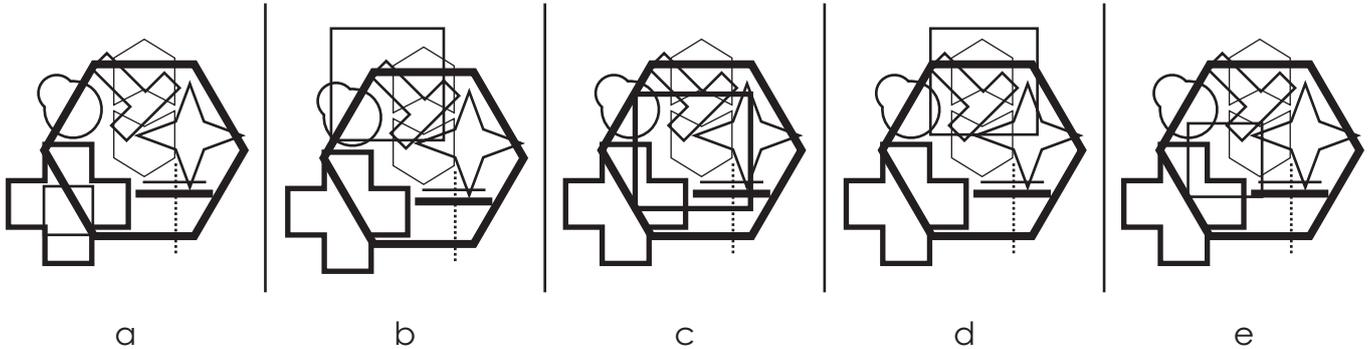


The answer is **b**. This is the only combination of shapes where the rectangle is the same size and line thickness. It has been rotated 45° clockwise. In options a, c and d, the rectangle is smaller and in e the rectangle has a different line thickness.

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

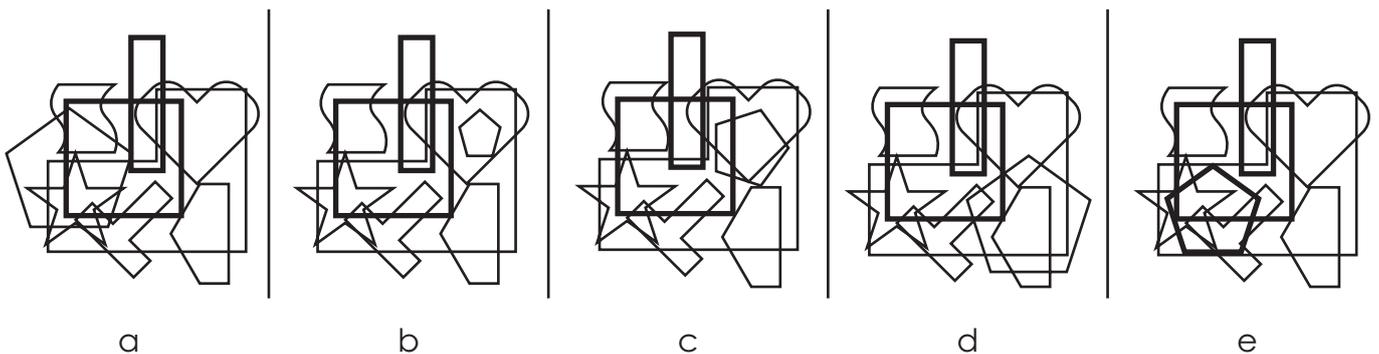
## 1 Practice

Select the option in which this shape is hidden. It will be the same size, but may be rotated.



## 2 Practice

Select the option in which this shape is hidden. It will be the same size, but may be rotated.



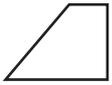
**END OF PRACTICE SECTION**

**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.

Select the option in which this shape is hidden. It will be the same size, but may be rotated.

1



a	b	c	d	e

2



a	b	c	d	e

3

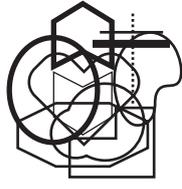


a	b	c	d	e

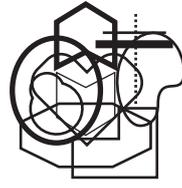
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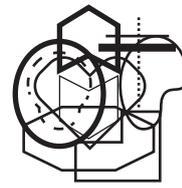
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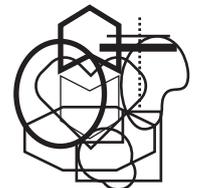
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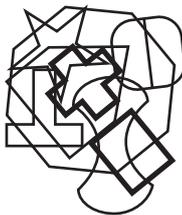


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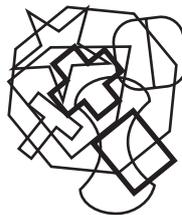


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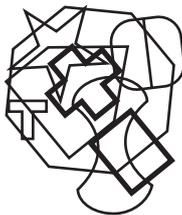
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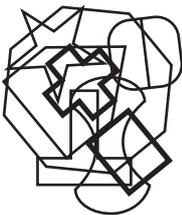
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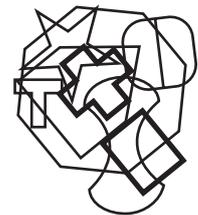
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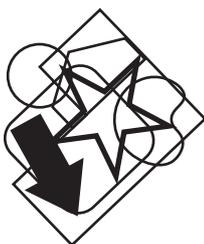
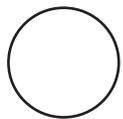


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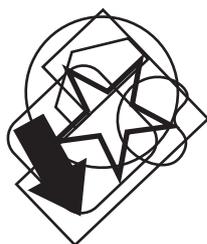


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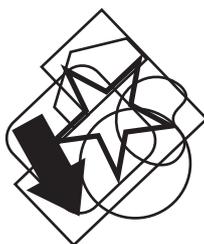
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a



b



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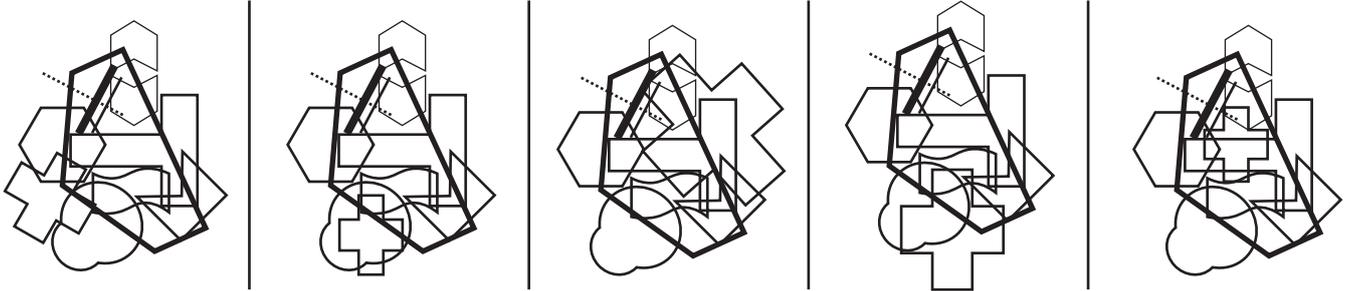
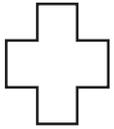


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e

7



a

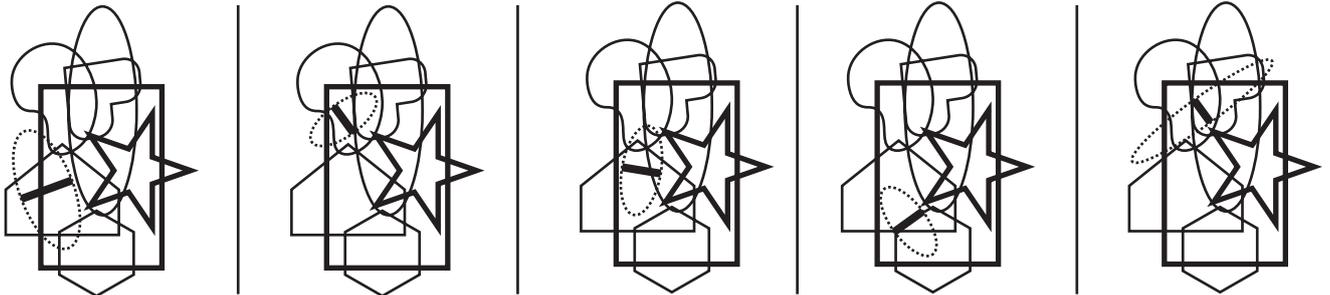
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8



a

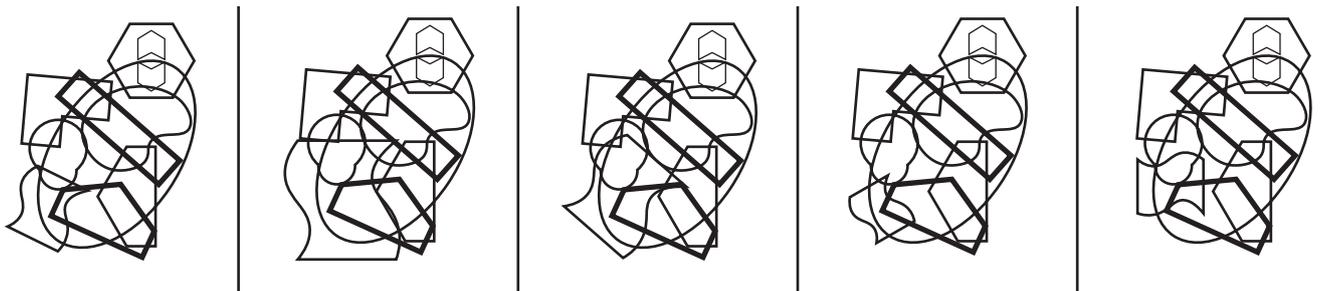
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9



a

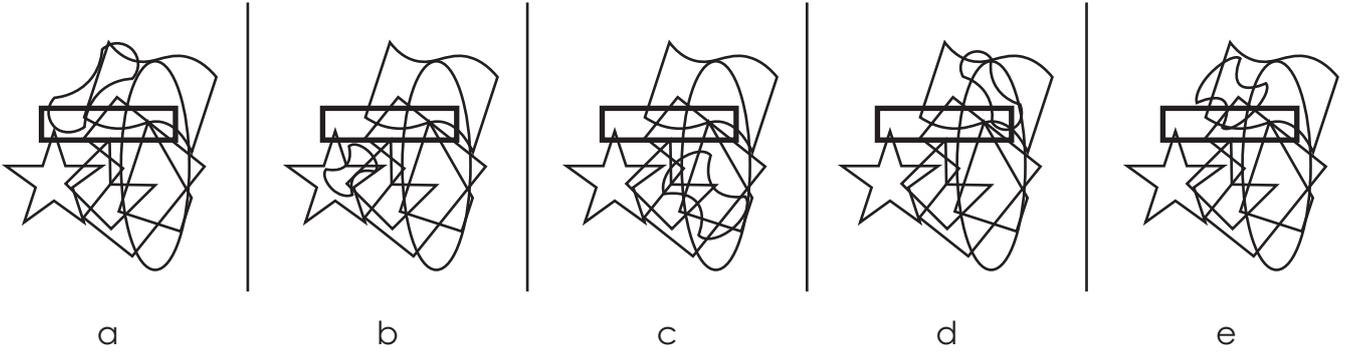
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d

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10



**END OF SPATIAL REASONING SUBTEST 2.**

# 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 17.  
The final result is 127.

What was the number I started with?

A. 150                      B. 64                      C. 79                      D. 48                      E. 36

The answer is **48**. You can work this out by taking the final result, 127, and reversing the steps described.

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**

Three identical books have a total weight of 840g. What is the weight of five of these books?

- A. 280g      B. 1,400g      C. 1,120g      D. 1.2kg      E. 960g

**2 Practice**

The perimeter of a rectangle is 30cm. The length of the rectangle is 12cm. What is the width of the rectangle?

- A. 10cm      B. 3cm      C. 6cm      D. 9cm      E. 4cm

**END OF PRACTICE SECTION**

The maths test begins on the next page.

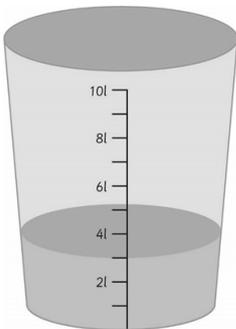
- You have 25 minutes to complete the maths test.
- There are 25 questions to answer.
- Your time will start when you turn over the page.
- Do not turn over the page until you are told to do so.

**Maths**  
**(25 minutes)**

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

- 1** A right-angled triangle has one angle that is 60 degrees. What are the other two angles?
- A All angles are 60°
- B 90° and 30°
- C This cannot make a valid triangle.
- D 210°
- E 60° and 90°

- 2** Tariq adds 2500ml of water into this bucket. How many litres of water are in the bucket now?



- A** 3,000ml      **B** 4.5l      **C** 5.5l      **D** 7l      **E** 5,500ml
- 3** Calculate the value of:  
 $2\frac{1}{2} - 1\frac{3}{8} =$
- A**  $1\frac{3}{4}$       **B**  $1\frac{1}{4}$       **C** 1      **D**  $3\frac{3}{4}$       **E**  $2\frac{1}{4}$

**4** Which is the largest number?

0.27    $\frac{1}{2}$     $\frac{1}{5}$    0.52    $\frac{2}{5}$

**A** 0.27                      **B**  $\frac{1}{2}$                       **C**  $\frac{1}{5}$                       **D** 0.52                      **E**  $\frac{2}{5}$

**5** Which number is closest to 0.19?

0.27    $\frac{1}{2}$     $\frac{1}{5}$    0.52    $\frac{2}{5}$

**A** 0.27                      **B**  $\frac{1}{2}$                       **C**  $\frac{1}{5}$                       **D** 0.52                      **E**  $\frac{2}{5}$

**6** The total flying time from Abuja to New York via London is 15 hours. The section from Abuja to London takes 40% of the time. The flight takes off from Abuja at 10.20am.

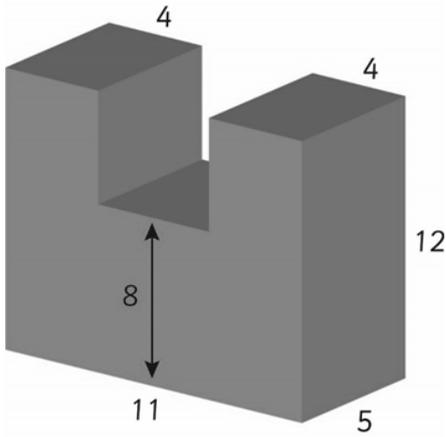
Abuja is 1 hour ahead of London. What time does the flight land in London?

**A** 1:20am                      **B** 6:20am                      **C** 4:20pm                      **D** 4:20am                      **E** 3:20pm

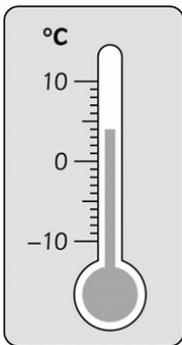
**7** There is a stopover in London of 3 hours. New York is 5 hours behind London. What time does the flight land in New York?

**A** 10:20pm                      **B** 3:20am                      **C** 4:20am                      **D** 1:20am                      **E** 8:20pm

- 8 What is the volume of this shape? (All measurements are in cm.)



- A 568cm<sup>3</sup>      B 800cm<sup>3</sup>      C 600cm<sup>3</sup>      D 660cm<sup>3</sup>      E 1,056cm<sup>3</sup>
- 9 Amy took the temperature at 10am as seen on this thermometer. 13 hours later the temperature had reduced by 7 degrees. What was the temperature then?



- A 7°      B -5°      C -1°      D -3°      E 6°
- 10 This is a train timetable for the Edinburgh to Kings Cross train.

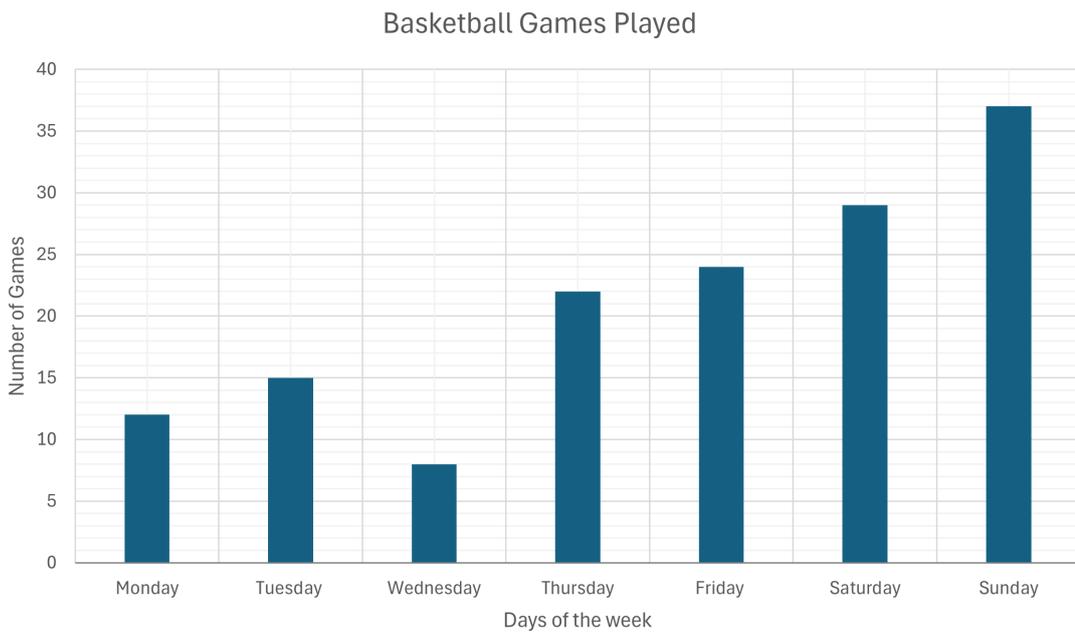
Explore Travel – Train Timetable			
Edinburgh	05:58	08:25	09:45
Newcastle	07:42	10:10	11:30
Doncaster	09:16	11:42	13:13
Kings Cross	10:53	13:20	14:14

If the 05:58 left 17 minutes late, what time would passengers arrive at Doncaster?

- A 09:00      B 07:52      C 09:33      D 10:33      E 09:52

- 11 A replacement bus is needed for the 08:25 from Edinburgh between Newcastle and Doncaster. The bus takes 2 hours and 10 minutes. How late will the passengers arrive in Doncaster?
- A 0 minutes      B 2 hours and 10 minutes      C 12 minutes      D 38 minutes      E 1 hour and 10 minutes

The graph below shows the number of basketball games played at a leisure centre over a week. Use the graph to answer questions 12 – 14.



- 12 What was the total number of games at the weekend?
- A 66      B 56      C 90      D 147      E 27
- 13 What is the range between the numbers of games played across the week?
- A 34      B 20      C 147      D 29      E 37
- 14 What was the mean number of games played per day?
- A 21      B 20      C 22      D 23      E 25

15 Calculate  $17.3 + 12.9 =$

- A** 30.1      **B** 29.9      **C** 31.1      **D** 31.2      **E** 30.2

16 Calculate  $7.2 \times 11.4 =$

- A** 82.08      **B** 82.0      **C** 87.2      **D** 82.8      **E** 87.02

17 Find 15% of 150.

- A** 12.5      **B** 22.5      **C** 1.5      **D** 19.5      **E** 15

18 Joao runs a restaurant. The first customer buys a biscuit, a banana and a bottle of water for £4. The second customer buys 2 bottles of water, a banana and a biscuit for £6. The third customer buys 2 biscuits, a banana and a bottle of water for £5.50.

How much does a biscuit cost?

- A** £1.50      **B** £1.00      **C** £2.50      **D** £0.50      **E** £2.00

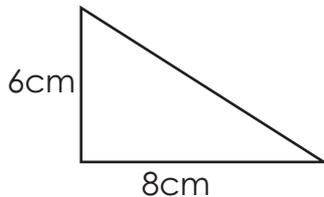
19 How much does a banana cost?

- A** £1.50      **B** £1.00      **C** £2.50      **D** £0.50      **E** £2.00

20 How much does a bottle of water cost?

- A £1.50      B £1.00      C £2.50      D £0.50      E £2.00

21 Calculate the area of this triangle.



- A  $46\text{cm}^2$       B  $32\text{cm}^2$       C  $24\text{cm}^2$       D  $16\text{cm}^2$       E  $62\text{cm}^2$

22 What is the value of p in  $3p^2 = 108$ ?

- A 4      B 9      C 3      D 6      E 5

23 Miss Miller's class recorded the number of each type of bird they saw from the classroom window.

Pigeon	Wren	Sparrow	Blackbird
32	3	8	7

What percentage of the birds were pigeons?

- A 12%      B 64%      C 56%      D 32%      E 48%

**24** What is the value of  $j$  in this equation:  $\frac{j + 8.5}{60} = 20\%$

**A** 1.5

**B** 68.5

**C** 42.5

**D** 3.5

**E** 2.5

**25** What is the highest common factor of 18 and 36?

**A** 12

**B** 36

**C** 9

**D** 6

**E** 18

**END OF MATHEMATICS TEST**





