11+ Bucks NVR, Spatial Reasoning & Maths Tests

- 8 BUCKS Practice Papers
- 1000+ BUCKS Style MCQs
- Detailed Answers & Hints
- Mirrors Real Exam Pattern

PiAcademy

11+ Bucks
Paper 1 - Session 2

Instructions:

1. **Do not turn over this page** until instructed to do so.
2. This paper contains **three tests**:
   - Test 1: **Non-Verbal Reasoning (NVR)**
   - Test 2: **Spatial Reasoning**
   - Test 3: **Maths**
3. Each test contains specific instructions. Read them carefully before starting.
4. Listen carefully to the **instructions read out by the invigilator**. They will guide you through the test process.
5. Check that your **name** and **date of birth** are correctly shown on the answer sheet.
6. In the answer sheet, **mark** the correct answer by **drawing a line with your pencil** through the small rectangular box beside it like this.
7. You must make sure that you **mark your answer in the box** that has the **same question number** as the question you are doing in the paper.
8. If you make a mistake, rub out your mark as well as you can and mark your new answer.
9. The answer sheet will be marked by a computer.
10. You may **do any rough work** on the **question paper**.
11. This is a **multiple-choice test**. Each question carries **1 mark**.
12. Some questions may require you to mark two correct answers, so make sure you read the instructions carefully in each section of the test.
13. At the bottom of each page in the paper are instructions mentioned below telling you:

    to stop
    Do not turn the page until told to do so !

    to go on
    Please go on to the next page >>>

    or whether you have reached the end of the test paper.
    END OF TEST PAPER

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11+ Bucks
Session 2 - Test 1
Non-Verbal Reasoning

Instructions:

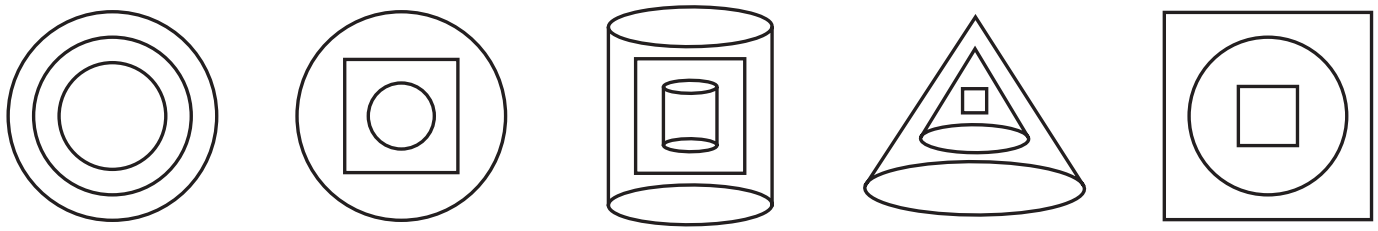
1. **Do not turn over this page** until instructed to do so.
2. There are **three sub-tests**.
3. Each sub-test begins with an untimed practice section, conducted with the invigilator.
   - The **first question** is solved with a detailed solution.
   - The remaining **two questions** are for you to attempt.
4. Each sub-test has **five** main questions.
5. Each sub-test is timed individually (**5 minutes** per sub-test).
6. Total time for main questions is **15 minutes**.
7. Work quickly and carefully through the questions.
8. If you finish early, go back and check your work.
9. This is a **multiple-choice test**. Each question carries **1 mark**.

NVR Sub-test 1 Practice Section

Take as much time as you need to read this example carefully and complete the practice question that follows.

In each of the rows below there are five figures. Find the figure in each row that is most unlike the other four.

Example

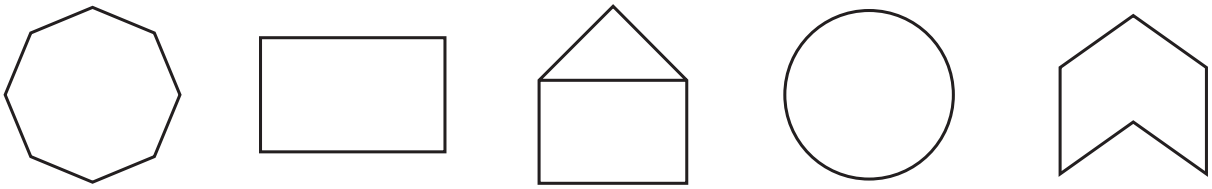


A **B** **C** **D** **E**

*The correct answer is **D** because in all of the shapes the outermost image and the innermost image are same except D which has outermost image different from the innermost image, so **D** is the odd one out.*

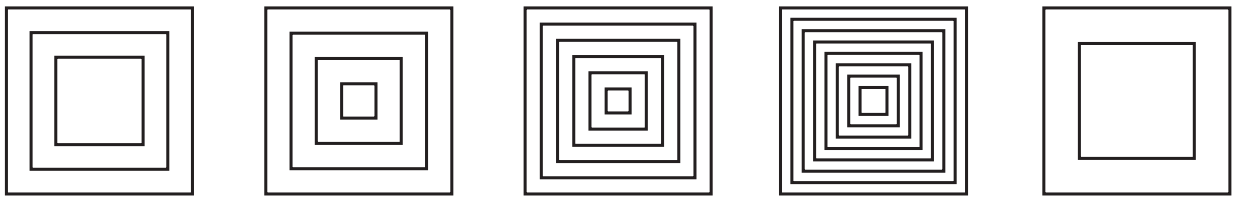
Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P1



A B C D E

P2



A B C D E

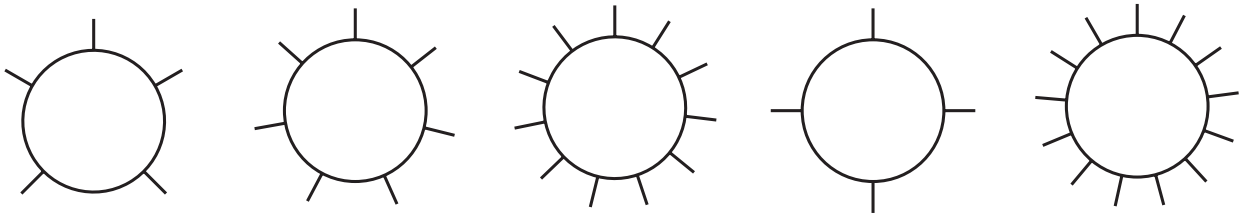
This is the end of NVR Sub-test 1 Practice Section.

NVR Sub-test 1

*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

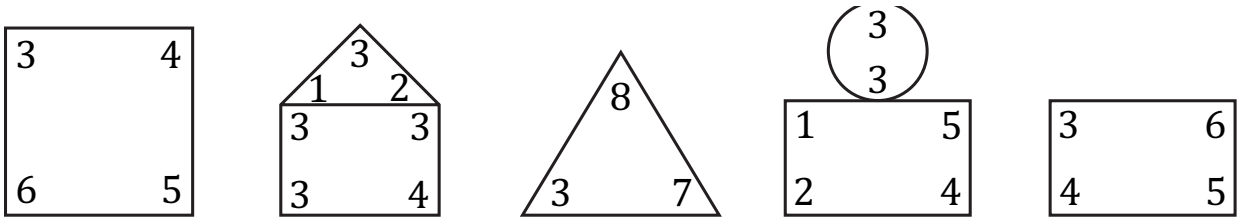
In each of the rows below there are five figures. Find the figure in each row that is most unlike the other four and mark its letter on the answer sheet.

1



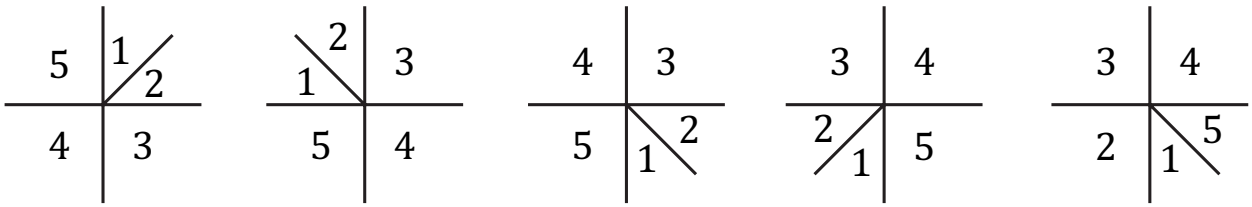
A **B** **C** **D** **E**

2



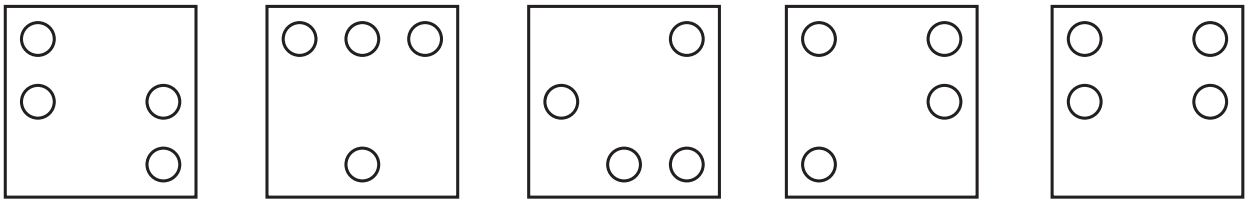
A **B** **C** **D** **E**

3



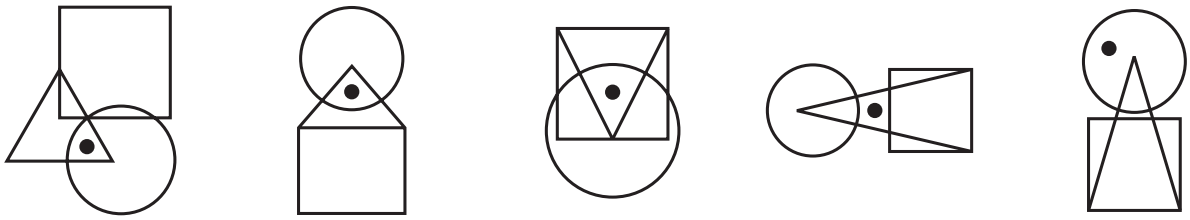
A **B** **C** **D** **E**

4



A B C D E

5



A B C D E

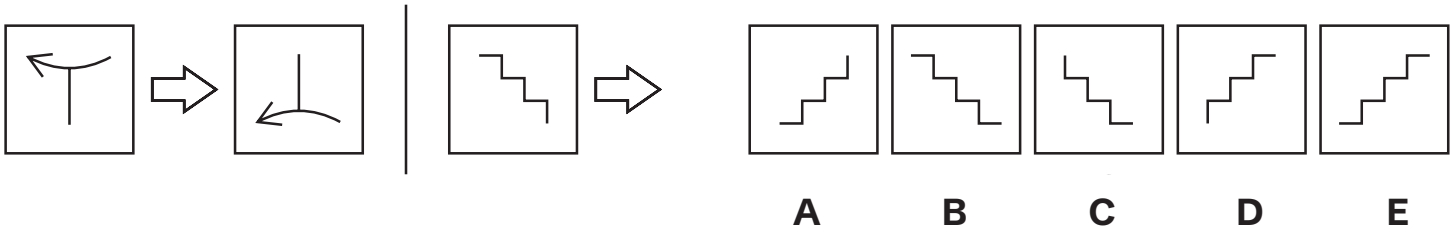
This is the end of NVR Sub-test 1.

NVR Sub-test 2 Practice Section

Take as much time as you need to read this example carefully and complete the practice question that follows.

On the left, two shapes are shown with an arrow between them, indicating a relationship. A third shape follows, with an arrow and five answer choices. Select the shape that pairs with the third shape in the same way as the first pair.

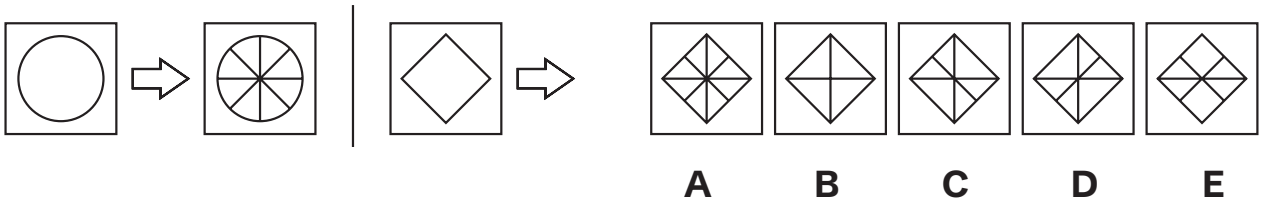
Example



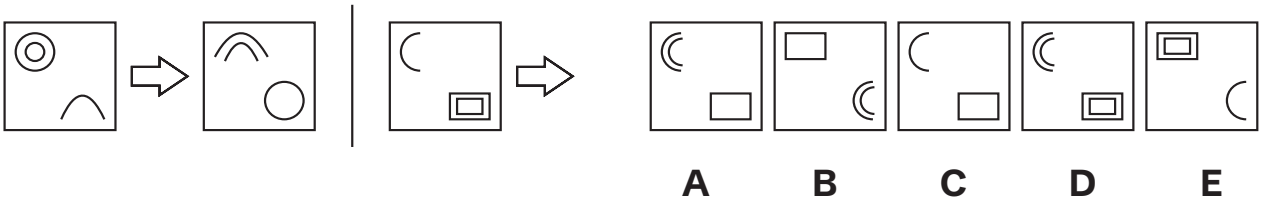
*The correct answer is **A** because the first figure is vertically inverted to get the second figure, so the same vertical inversion is applied to the third figure, making option **A** the correct match.*

Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P3



P4



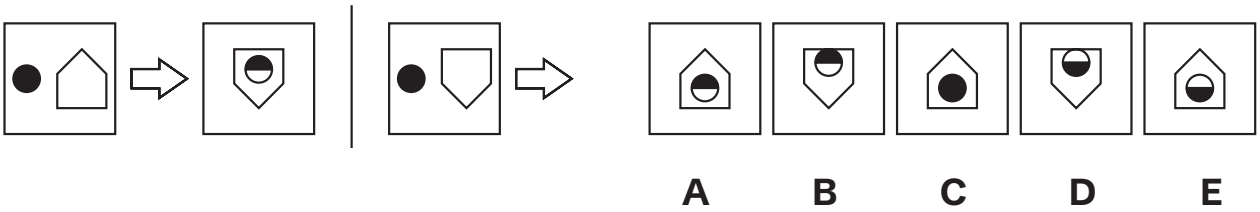
This is the end of NVR Sub-test 2 Practice Section.

NVR Sub-test 2

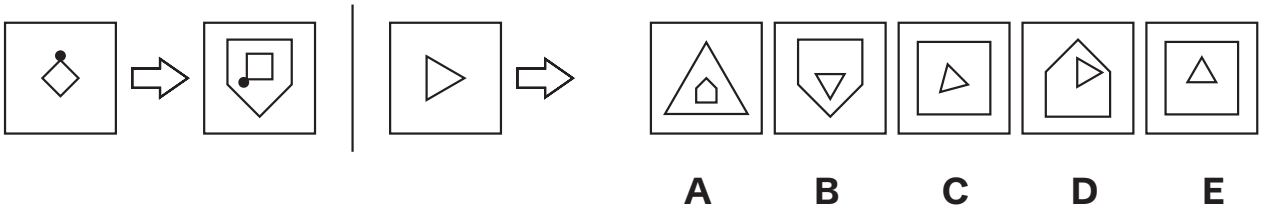
*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

On the left, two shapes are shown with an arrow between them, indicating a relationship. A third shape follows, with an arrow and five answer choices. Select the shape that pairs with the third shape in the same way as the first pair and mark its letter on your answer sheet.

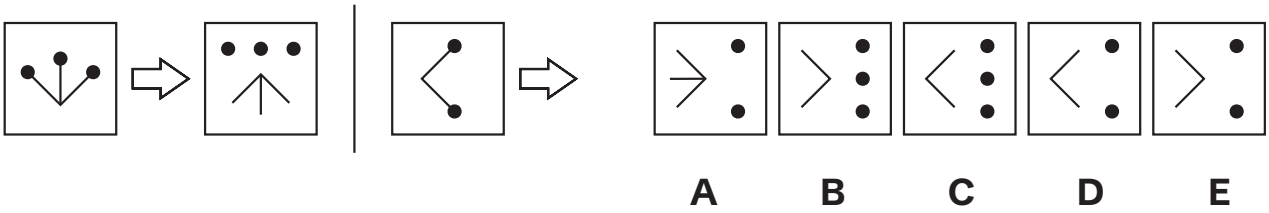
6



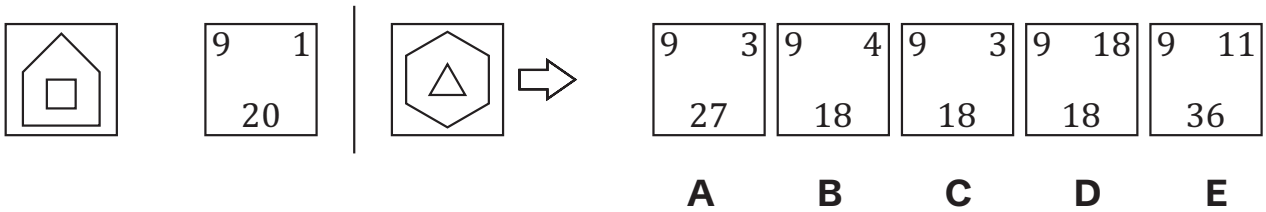
7



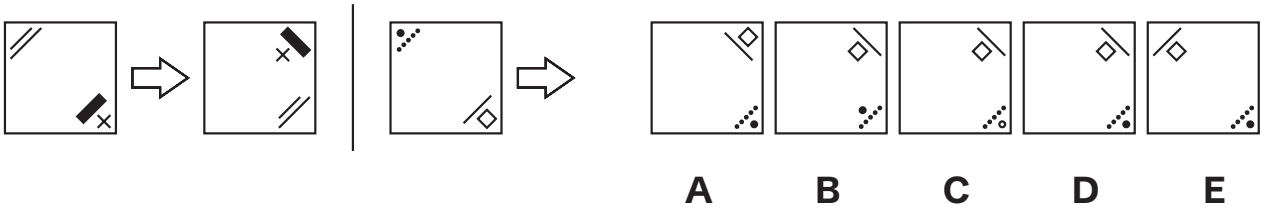
8



9



10



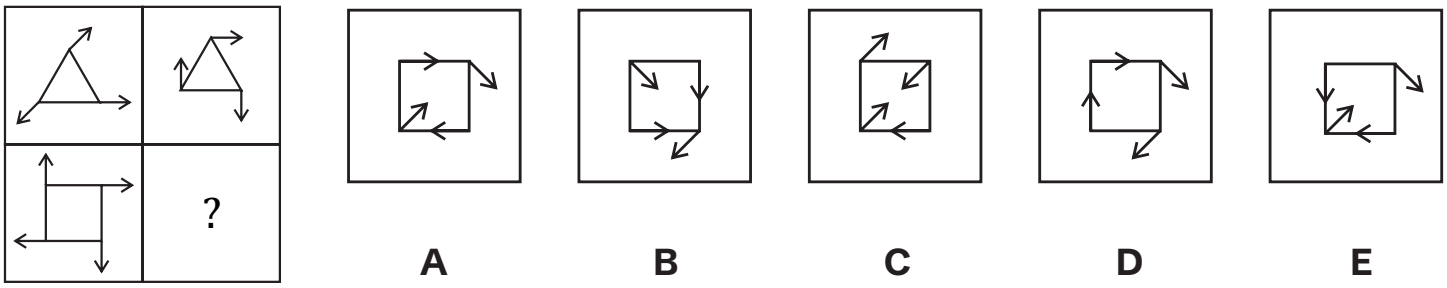
This is the end of NVR Sub-test 2.

NVR Sub-test 3 Practice Section

Take as much time as you need to read this example carefully and complete the practice question that follows.

On the left, a large square is divided into four smaller squares, with one left empty. The other three contain patterns following a specific rule. From the five answer choices on the right, select the pattern that correctly completes the large square.

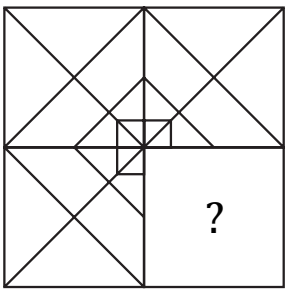
Example

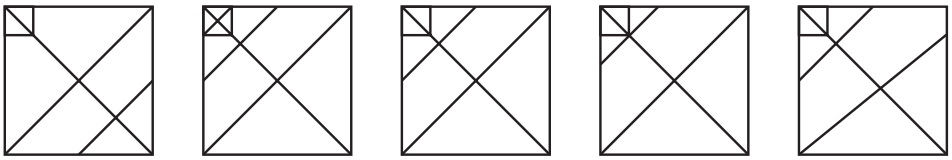


*The correct answer is **E** because in the triangle pattern the arrows rotate 45°, 90°, and 135° in the clockwise direction, and similarly in the square pattern the arrows should rotate 45°, 90°, 135°, and 180° in the clockwise direction, so **E** is the only option that correctly follows this rotation pattern.*

Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

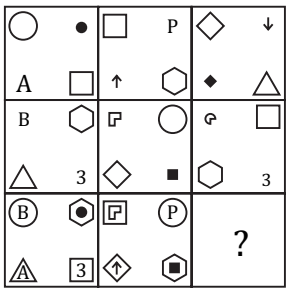
P5





A B C D E

P6



A B C D E

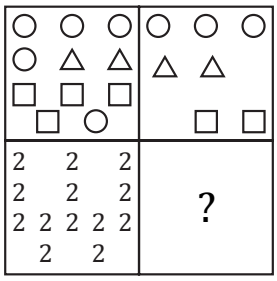
This is the end of NVR Sub-test 3 Practice Section.

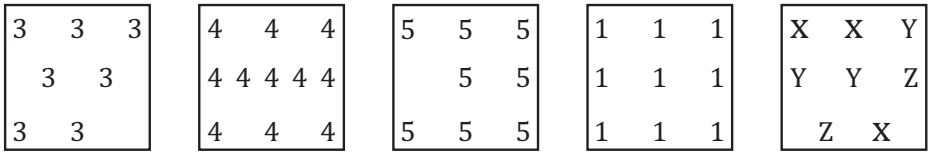
NVR Sub-test 3

*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

On the left, a large square is divided into four smaller squares, with one left empty. The other three contain patterns following a specific rule. From the five answer choices on the right, select the pattern that correctly completes the large square and mark its letter on your answer sheet.

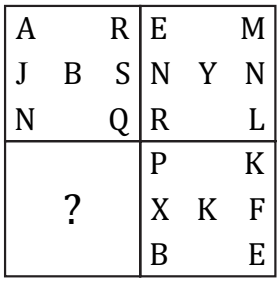
11

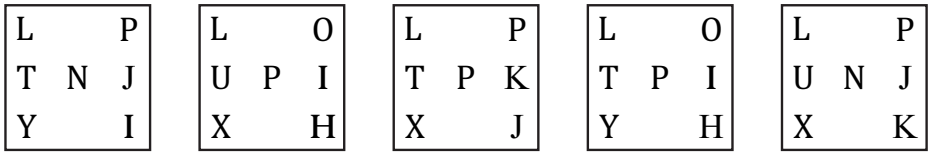




A B C D E

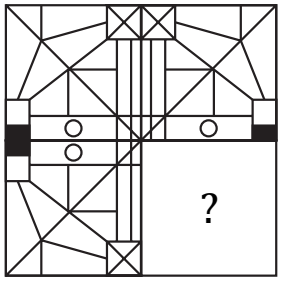
12

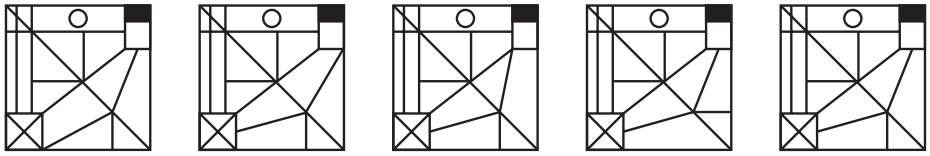




A B C D E

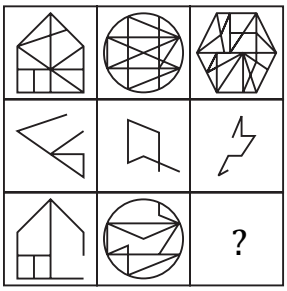
13





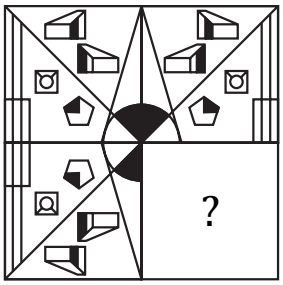
A B C D E

14



A B C D E

15



A B C D E

This is the end of NVR Sub-test 3.

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Session 2 - Test 2
Spatial Reasoning

Instructions:

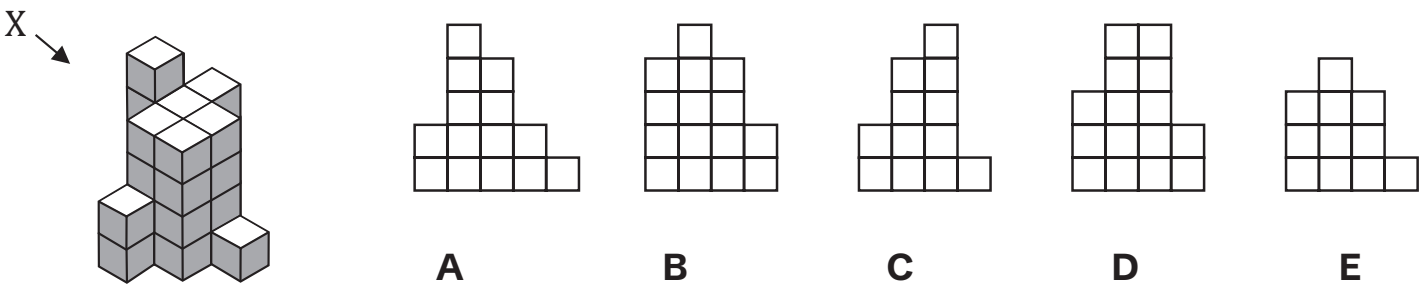
1. **Do not turn over this page** until instructed to do so.
2. There are **two sub-tests**.
3. Each sub-test begins with an untimed practice section, conducted with the invigilator.
   - The **first question** is solved with a detailed solution.
   - The remaining **two questions** are for you to attempt.
4. Each sub-test has **five** main questions.
5. Each sub-test is timed individually (**4-5 minutes** per sub-test).
6. Total time for main questions is **10 minutes**.
7. Work quickly and carefully through the questions.
8. If you finish early, go back and check your work.
9. This is a **multiple-choice test**. Each question carries **1 mark**.

Spatial Reasoning Sub-test 1 Practice Section

Take as much time as you need to read this example carefully and complete the practice question that follows.

A 3D shape is shown on the left with a marked viewpoint (X). On the right, there are five 2D views. One of them represents the correct front view of the 3D shape when looked at from point X. Identify the correct 2D view.

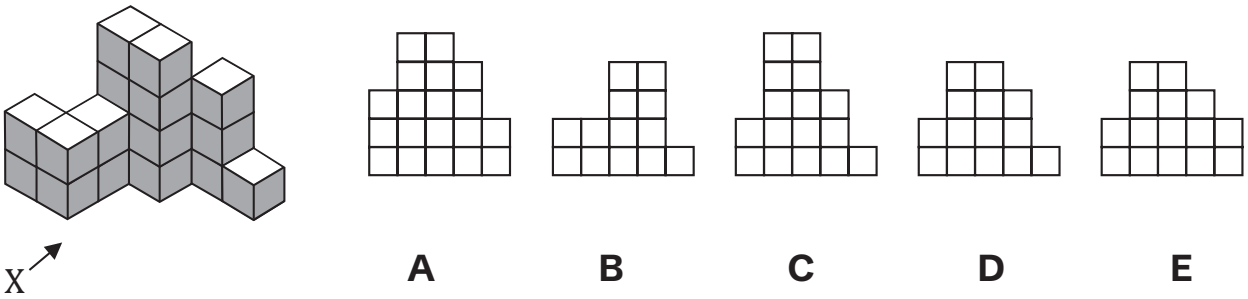
Example



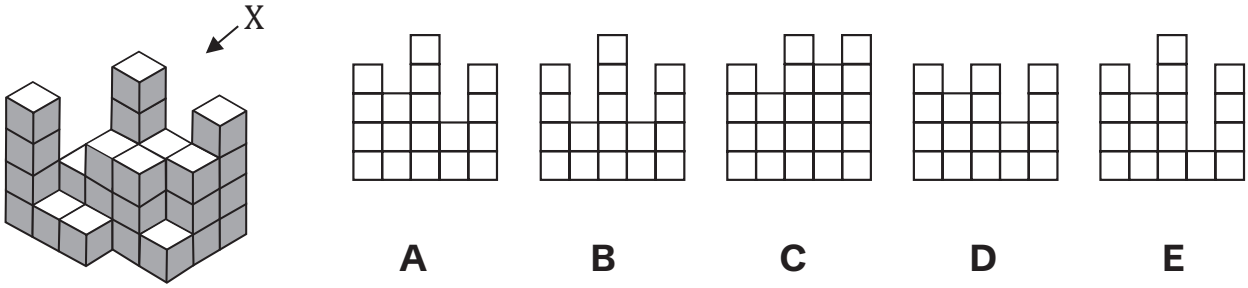
*This makes **B** the correct answer.*

Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P1



P2



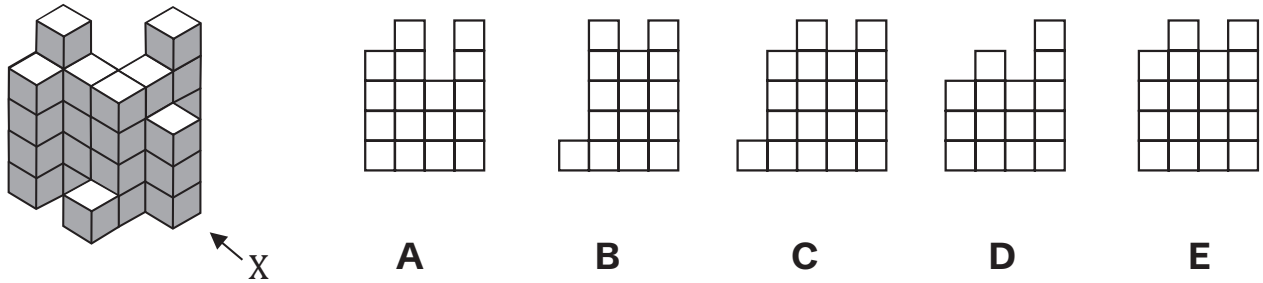
This is the end of Spatial Reasoning Sub-test 1 Practice Section.

Spatial Reasoning Sub-test 1

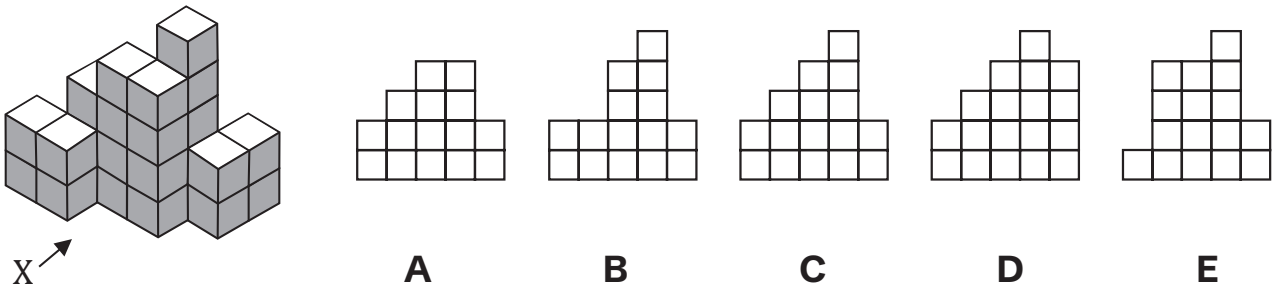
*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

A 3D shape is shown on the left with a marked viewpoint (X). On the right, there are five 2D views. One of them represents the correct front view of the 3D shape when looked at from point X. Identify the correct 2D view and mark its letter on your answer sheet.

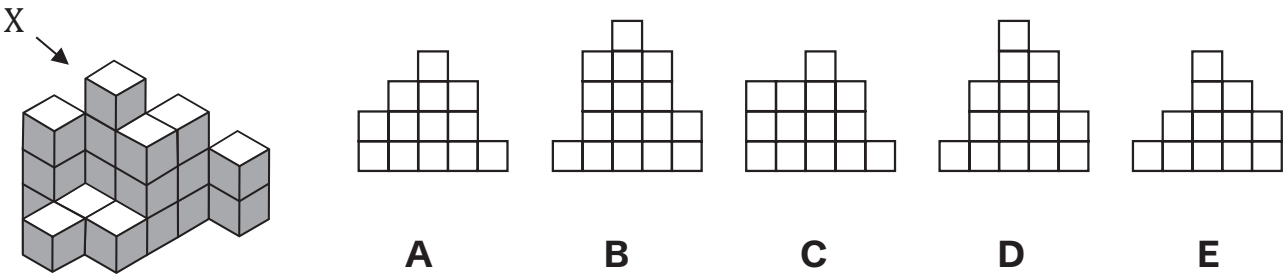
1



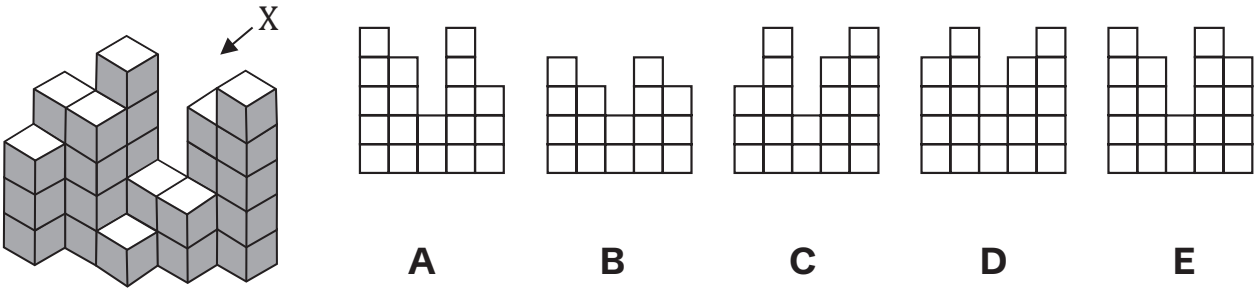
2



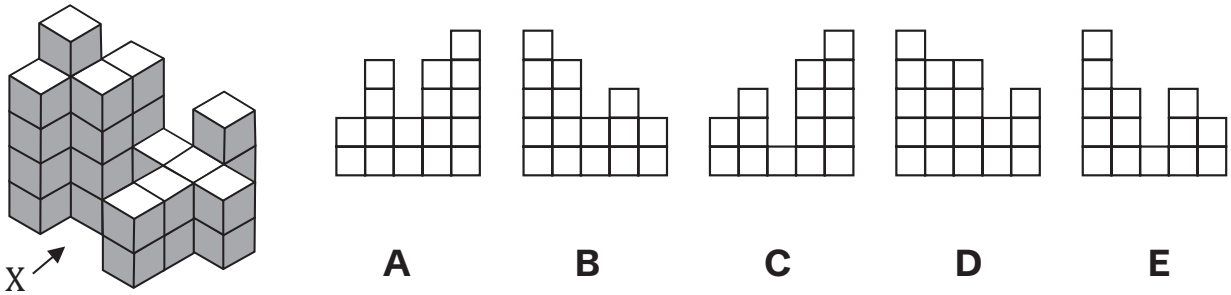
3



4



5



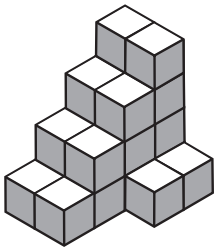
This is the end of Spatial Reasoning Sub-test 1.

Spatial Reasoning Sub-test 2 Practice Section

Take as much time as you need to read this example carefully and complete the practice question that follows.

A 3D shape made of blocks is shown on the left. Count the total number of blocks in the shape. Choose the correct answer from the five options on the right.

Example

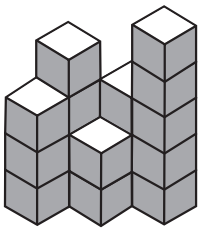


20	22	18	25	15
A	**B**	**C**	**D**	**E**

*The correct answer is **B**. Looking from the front, going from left to right, there are 2, 4, 7, 9 blocks. So the total number of blocks is 22. This makes **B** the correct answer.*

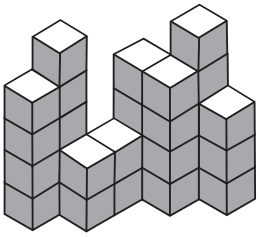
Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P3



15	20	13	21	17
A	**B**	**C**	**D**	**E**

P4



29	25	31	35	22
A	**B**	**C**	**D**	**E**

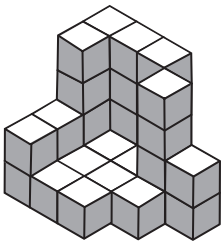
This is the end of Spatial Reasoning Sub-test 2 Practice Section.

Spatial Reasoning Sub-test 2

*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

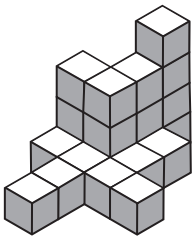
A 3D shape made of blocks is shown on the left. Count the total number of blocks in the shape. Choose the correct answer from the five options on the right and mark its letter on your answer sheet.

6



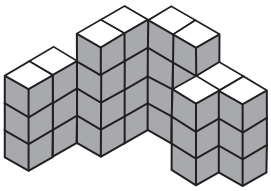
35	37	33	29	31
A	**B**	**C**	**D**	**E**

7



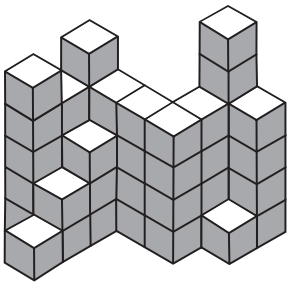
20	17	22	21	19
A	**B**	**C**	**D**	**E**

8



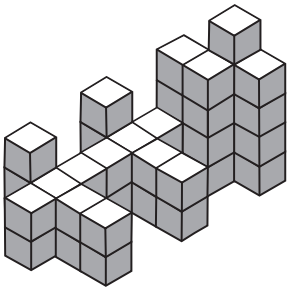
31	28	29	32	30
A	**B**	**C**	**D**	**E**

9



45	47	48	42	49
A	**B**	**C**	**D**	**E**

10



43	41	44	42	37
A	**B**	**C**	**D**	**E**

This is the end of Spatial Reasoning Sub-test 2.

PiAcademy

11+ Bucks
Session 2 - Test 3
Paper 1 - Maths

Instructions:

1. **Do not turn over this page** until instructed to do so.
2. The test begins with a **5-minute practice section**.
3. The practice section includes 4 questions.
4. The practice section is followed by the main questions.
5. Total time for the main questions is **25 minutes**.
6. Work quickly and carefully through the questions.
7. If you finish early, go back and check your work.
8. This is a **multiple-choice test**. Each question carries **1 mark**.

to stop:
Do not turn the page until told to do so ⚠

to go on:
Please go on to the next page >>>

or whether you have reached the end of the section/test.
END OF TEST

Maths: Practice Section (5 mins)

Try the practice questions below. Work out the correct answer and mark it on the answer sheet.

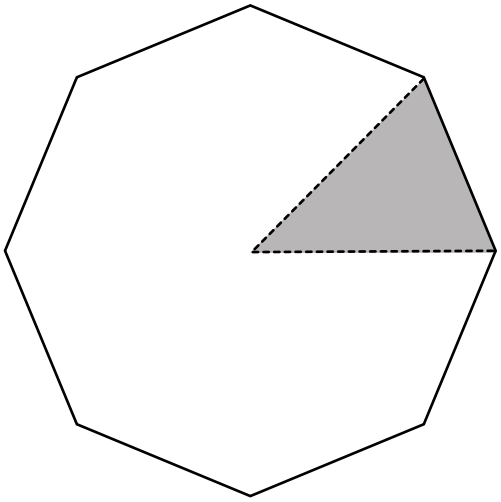
P1

Calculate the following: 48 - 3 (12 - 3^2)

A 21 **B** 33 **C** 39 **D** 45 **E** 57

P2

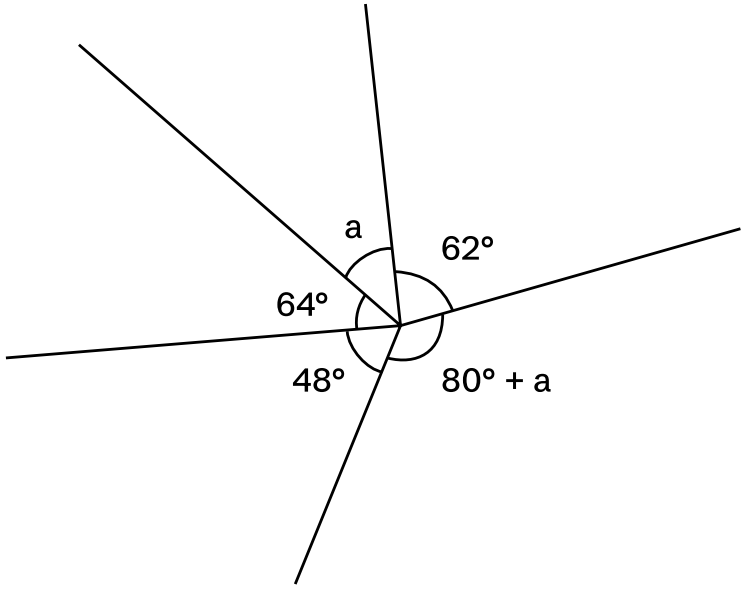
This diagram shows a regular octagon.



What fraction of the octagon is shaded?

A $\frac{1}{2}$ **B** $\frac{1}{4}$ **C** $\frac{3}{8}$ **D** $\frac{1}{8}$ **E** $\frac{3}{5}$

P3 What is the value of a in the given figure?



A 42° **B** 53° **C** 48° **D** 55° **E** 57°

P4 Oliver's scores on his science tests are 14, 8, 17, 11, 9 and 13.

What is his mean (average) score?

A 10.5 **B** 12 **C** 11.5 **D** 13 **E** 12.5

This is the end of the Maths practice section.

Maths

*You have **25 minutes to complete** this section. There are **23 questions**. This section is **marked**.*

1 **Which of the following numbers is divisible by all of the integers from 1 to 7 inclusive?**

A 12 × 35 **B** 42 × 7 **C** 35 × 7

D 12 × 7 **E** 5 × 35

2 Amelia is reading a novel.

- On Saturday, she reads 45 pages.
- On Sunday, she reads one-third of the remaining pages.
- On Monday, she reads the final 112 pages.

How many pages are in the novel?

A 213 pages **B** 215 pages **C** 230 pages

D 235 pages **E** 240 pages

3 2mm on a model train represents 25cm in real life. A model train carriage measures 160mm in length.

What is the real-life length of the carriage?

A 18 m **B** 20 m **C** 22 m **D** 24 m **E** 25 m

4 **Find three distinct prime numbers that add up to 41.**

A 3, 7, 31 **B** 2, 11, 29 **C** 3, 13, 23

D 5, 13, 21 **E** 3, 13, 27

5 **What is the value of 9 ÷ 16?**

A 0.552 **B** 0.562 **C** 0.572 **D** 0.567 **E** 0.526

6 If it takes 6 gardeners 4 hours to plant 24 saplings.

How many identical saplings could 9 gardeners plant in the same time?

A 32 saplings **B** 36 saplings **C** 38 saplings

D 34 saplings **E** 30 saplings

7 I am thinking of a number.

- It is less than 150.
- It is odd.
- It is a multiple of 7.
- When divided by 9, the remainder is 4.

What is the number?

A 91 **B** 63 **C** 77 **D** 49 **E** 133

8 **If p = 6 and q = 8, what is the value of $3p^2 - 4q$?**

A 76 **B** 78 **C** 80 **D** 82 **E** 84

9 To make fifteen 300ml cups of tea, Penelope needs 600ml of milk; the rest is water.

How much water does she need to make fifteen cups of tea?

A 3950 ml **B** 3800 ml **C** 4000 ml **D** 3850 ml **E** 3900 ml

10 When Thomas was 6 years old, his father was 30. Now, Thomas's father is four times as old as Thomas.

How old is Thomas now?

A 12 **B** 10 **C** 8 **D** 14 **E** 16

11 When making a fruit punch, I used two-fifths of a 2-litre bottle of juice for the first bowl. Then, I used three-quarters of the remaining juice to make the second bowl.

How much juice was left after both bowls were made?

A 0.2 litres **B** 0.25 litres **C** 0.3 litres

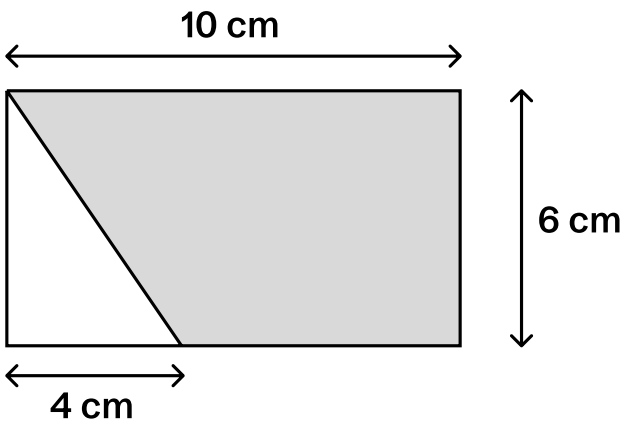
D 0.35 litres **E** 0.4 litres

12 Emma leaves her village to hike to a mountain viewpoint. The distance she travels over time since leaving her village is shown in the diagram below:

What is her average speed, in kilometres per hour, for the whole journey?

A 1.7 km/h **B** 2.0 km/h **C** 1.5 km/h **D** 1.8 km/h **E** 1.6 km/h

13 **Calculate the area of the shaded part.**



A 54 cm^2 **B** 48 cm^2 **C** 42 cm^2 **D** 45 cm^2 **E** 36 cm^2

14 I think of a number, add 5, multiply by 4 and subtract 18. The result is 42.

What number did I start with?

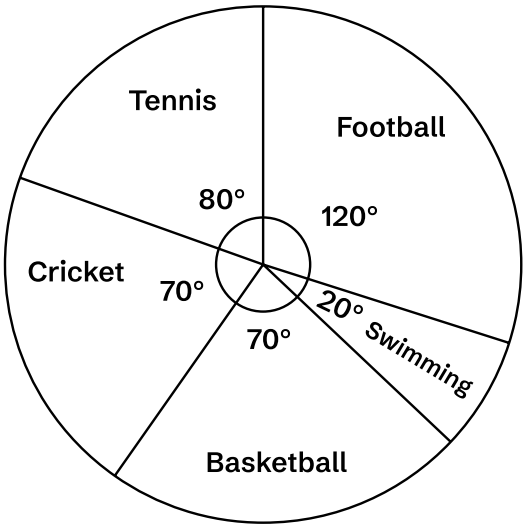
A 9 **B** 10 **C** 11 **D** 12 **E** 13

15 A cuboidal box has a volume of 165 cm^3. The width and height are 3 cm and 5 cm, respectively.

Determine the length of the cuboid.

A 11 cm **B** 10 cm **C** 13 cm **D** 12 cm **E** 15 cm

16 This pie chart shows the favourite sports of pupils in a school:



2520 pupils chose football as their favourite sport.

How many pupils chose swimming as their favourite sport?

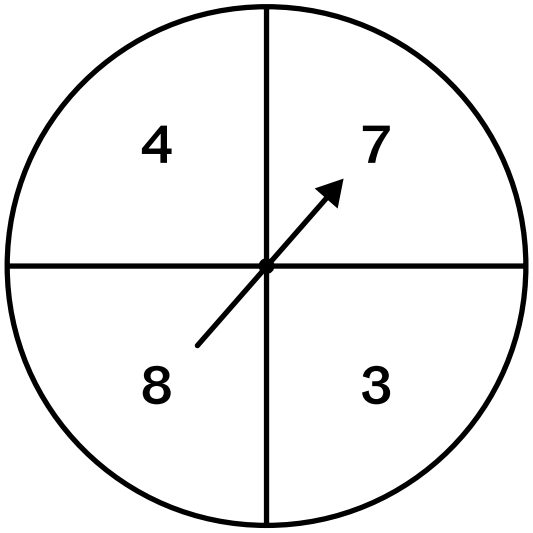
A 420 **B** 450 **C** 470 **D** 430 **E** 410

17 A whole number P gets rounded to the nearest 10 to give 560.
A whole number Q gets rounded to the nearest 100 to give 800.

What is the smallest possible value of Q – P?

A 176 **B** 186 **C** 196 **D** 206 **E** 216

18 **What is the probability of spinning an even number on this spinner?**



How many players have a weight of 80 kg or less?

A $\frac{1}{2}$ **B** $\frac{1}{3}$ **C** $\frac{2}{3}$ **D** $\frac{3}{6}$ **E** $\frac{1}{6}$

19 The table shows the distances in kilometres between cities in the North of Scotland

	Glasgow	Edinburgh	Stirling	Aberdeen	Dundee
Edinburgh	75				
Stirling	145	92			
Aberdeen	295	158	96		
Dundee	219	112	63	127	
Perth	107	42	50	138	87

One of the cities is 219km from Dundee.

Which city is this?

A Aberdeen **B** Edinburgh **C** Glasgow **D** Dundee **E** Perth

20 James is reading pages in his history textbook as a part of class assignment. After reading some pages he has completed one sixth of his assignment. After another four pages he has completed one-third of his assignment.

What is his target number of pages?

A 20 **B** 22 **C** 24 **D** 26 **E** 28

21 Four students participate in two athletic events at a school sports day - long jump and shot put. Their results are shown in the table below:

Student	Long jump (m)	Shot put (m)
James	3.8	6.5
Sophia	4.2	5.9
Lucas	3.5	7.2
Mai	4.5	6.1

How far did the student who threw the shot put the farthest manage to jump?

A 3.5 m **B** 3.8 m **C** 4.2 m **D** 4.5 m **E** 5.9 m

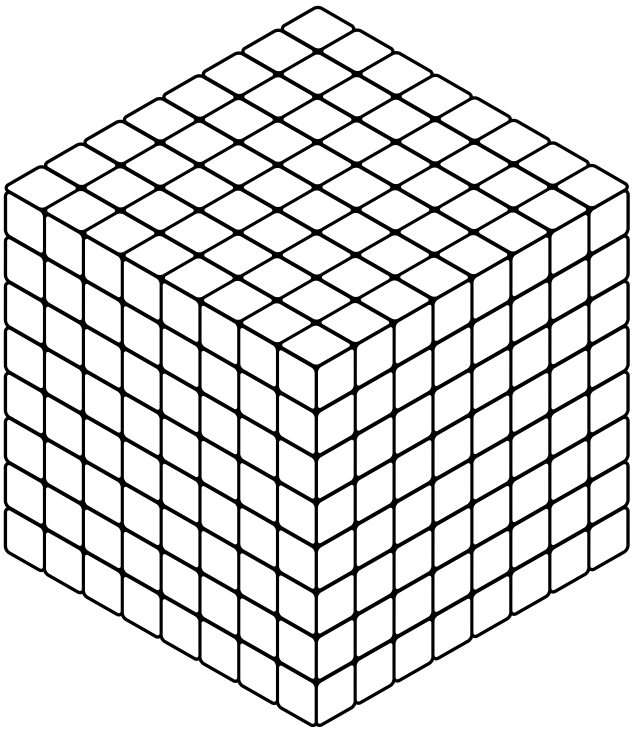
22 A bookstore sells 4 times as many fiction books as non-fiction books. 85 books are sold in total.

How many fiction books are sold?

A 64 books **B** 68 books **C** 70 books

D 72 books **E** 75 books

23 A 8 x 8 x 8 cube is painted, and then cut into 1 x 1 x 1 cubes.



How many of these cubes are painted on exactly two sides?

A 64 **B** 68 **C** 70 **D** 72 **E** 75

This is the end of the Test 3 - Maths.

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Bucks Paper 1 Session 2

Answer Marking Sheet

Pupil's Name
School Name

DATE OF TEST		
Day	Month	Year

UNIQUE PUPIL NUMBER												

SCHOOL NUMBER						

DATE OF BIRTH		
Day	Month	Year

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

Test 1 - Non Verbal Reasoning

Sub-test 1

EXAMPLE
A
B
C
D
E

P1 PRACTICE
A
B
C
D
E

P2 PRACTICE
A
B
C
D
E

1
A
B
C
D
E

2
A
B
C
D
E

3
A
B
C
D
E

4
A
B
C
D
E

5
A
B
C
D
E

Sub-test 2

EXAMPLE
A
B
C
D
E

P3 PRACTICE
A
B
C
D
E

P4 PRACTICE
A
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6
A
B
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7
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10
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E

Sub-test 3

EXAMPLE

A ☐
B ☐
C ☐
D ☐
E ~~☐~~

P5 PRACTICE

A ☐
B ☐
C ☐
D ☐
E ☐

P6 PRACTICE

A ☐
B ☐
C ☐
D ☐
E ☐

11

A ☐
B ☐
C ☐
D ☐
E ☐

12

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Test 2 - Spatial Reasoning

Sub-test 1

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Sub-test 2

EXAMPLE
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Test 3 - Maths

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Marks Scored: _____ **Time taken:** _____

Comments _____

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