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 3 - 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:

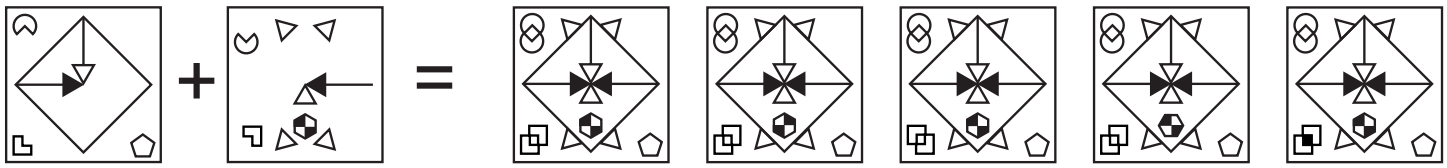
1. **Do not turn over this page** until instructed to do so.
2. There are **three sub-tests**.
3. Each sub-test begins with an untimed practice section, conducted with the invigilator.
    - The **first question** is solved with a detailed solution.
    - The remaining **two questions** are for you to 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.

On the left, two shapes are shown that are either added or subtracted to form a new shape. From the five answer choices on the right, select the shape that correctly represents the result.

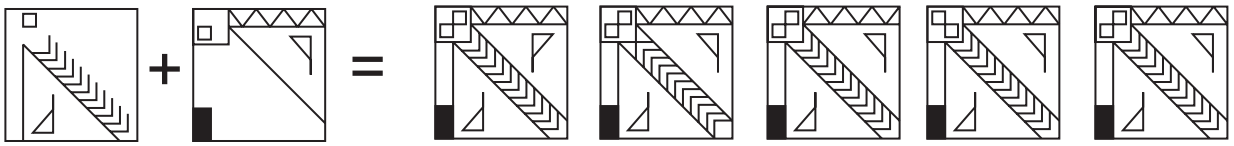
Example



*The correct answer is **A**. The two given shapes are combined to form a new shape. The correct option should represent a complete overlap of both original figures without any missing parts. Option **A** correctly displays the resulting merged shape.*

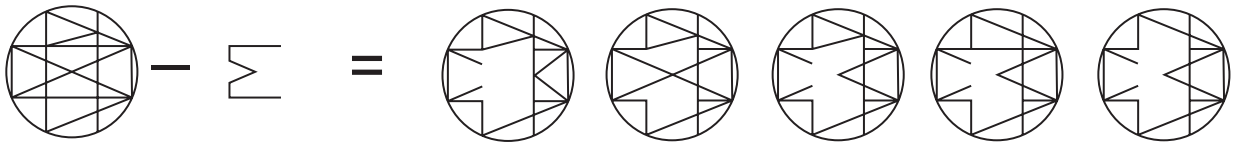
Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P1



A B C D E

P2



A B C D E

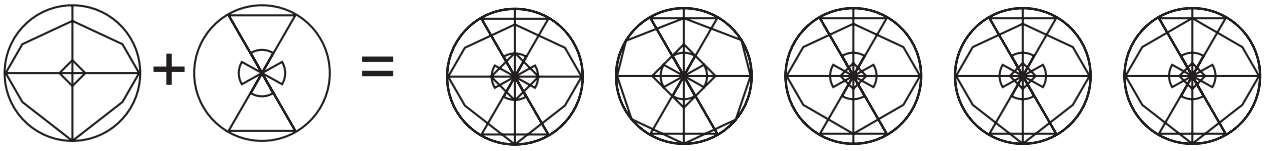
This is the end of NVR Sub-test 1 Practice Section.

NVR Sub-test 1

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

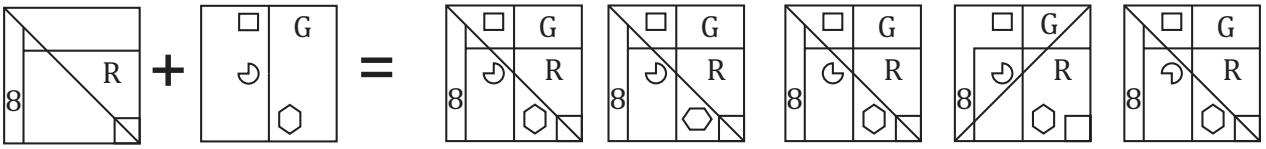
On the left, two shapes are shown that are either added or subtracted to form a new shape. From the five answer choices on the right, select the shape that correctly represents the result and mark its letter on the answer sheet.

1



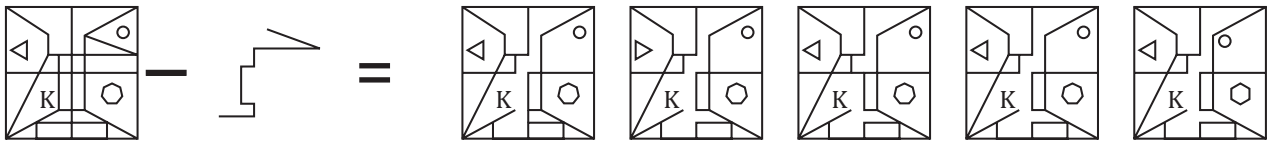
A B C D E

2



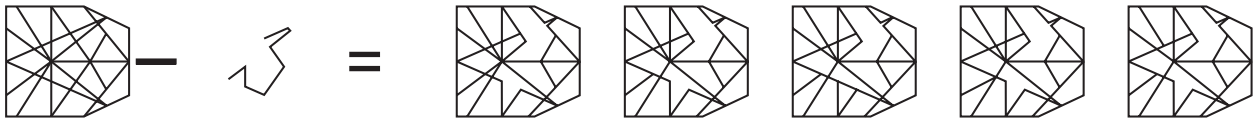
A B C D E

3



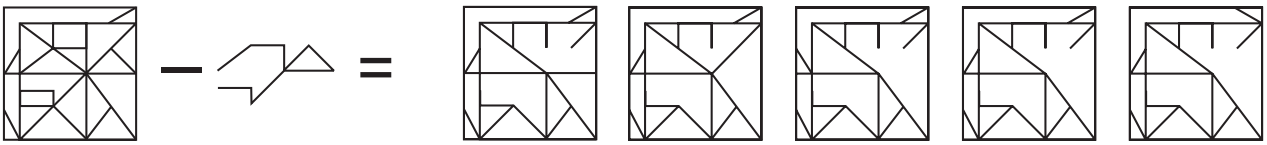
A B C D E

4



A B C D E

5



A B C D E

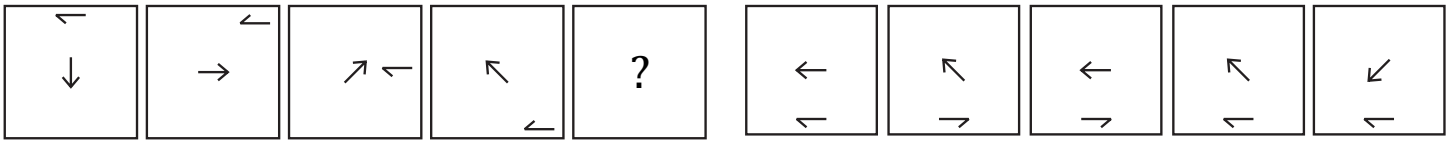
This is the end of NVR Sub-test 1.

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.

To the left in the row of shapes below there are five squares arranged in order. One of these squares has been left empty. Find which one of the five squares on the right should take the place of the empty square.

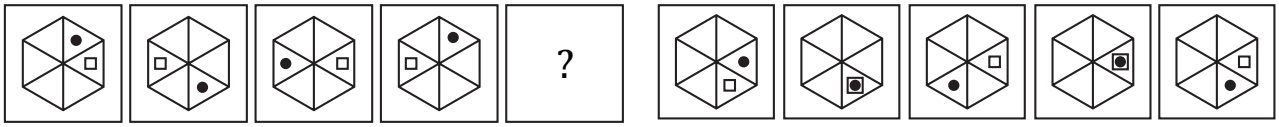
Example



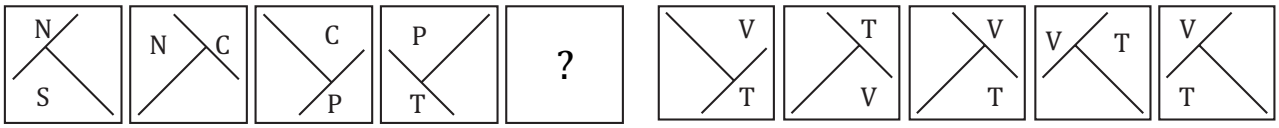
*The correct answer is **A**.*
*In this sequence, each step arrow at the centre rotates 90 degree clockwise direction and 45 degree anticlockwise direction alternately. The half-arrow moves half-a-side of the square boundary in a clockwise direction and in each step its head turns to the other side of the line. Option **A** correctly follows this pattern, with the arrow and positions changing as described in the rule.*

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

P3



P4



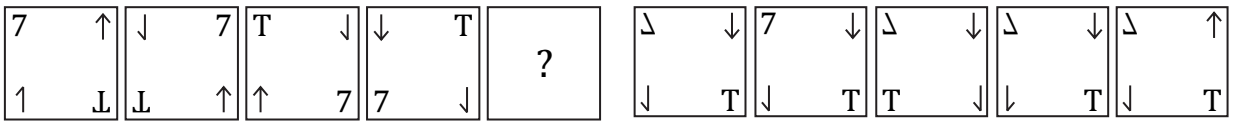
This is the end of NVR Sub-test 2 Practice Section.

NVR Sub-test 2

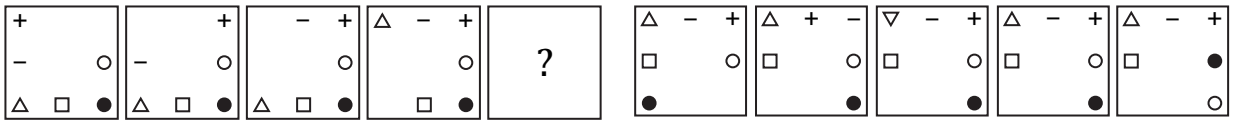
*You have **5 minutes** to complete these **five questions**.*
*This section is **marked**.*

To the left in the row of shapes below there are five squares arranged in order. One of these squares has been left empty. Find which one of the five squares on the right should take the place of the empty square and mark its letter on the answer sheet.

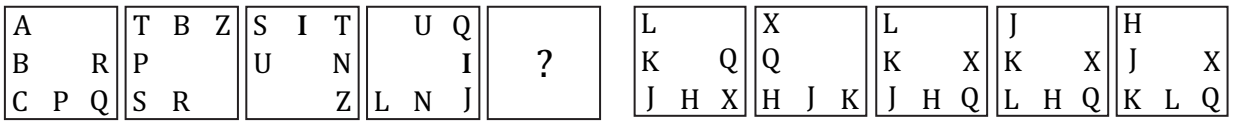
6



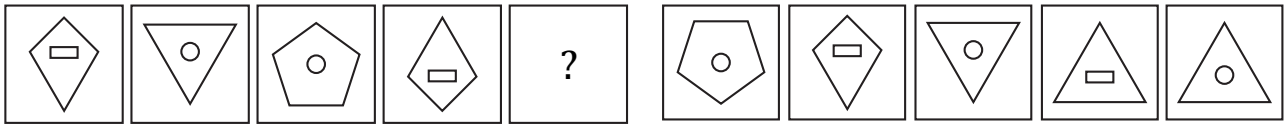
7



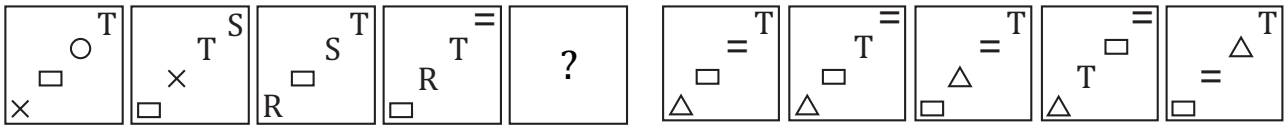
8



9



10



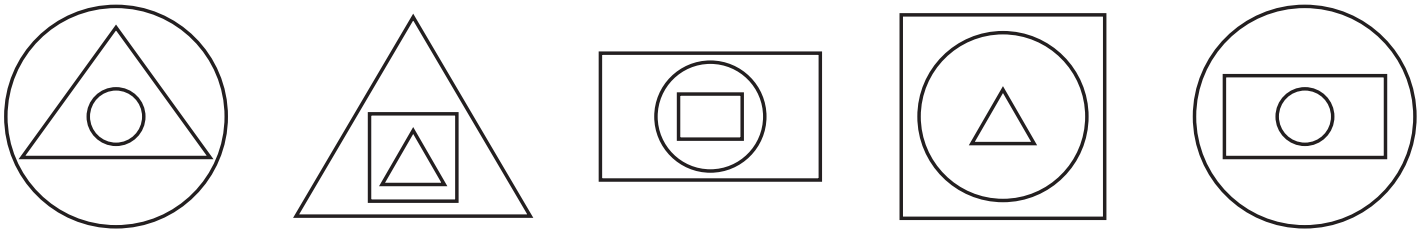
This is the end of NVR Sub-test 2.

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.

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

Example

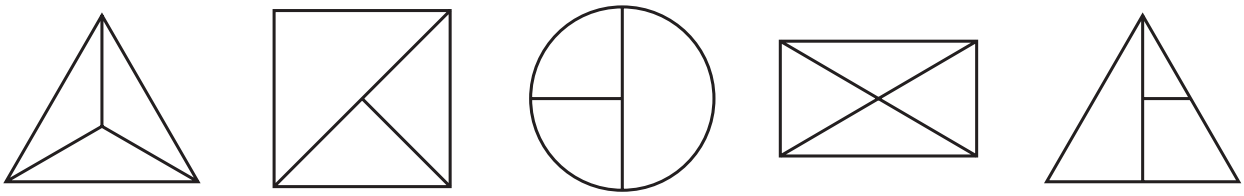


A **B** **C** **D** **E**

*The correct answer is **D** because in all of the shapes the outermost and innermost shapes are same except D which has inner shape triangle and outer shape circle, so **D** is the odd one out.*

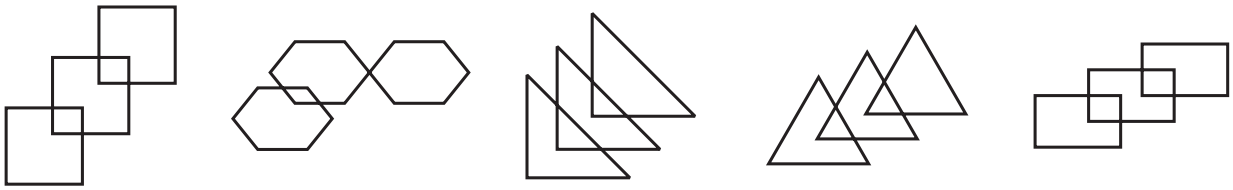
Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P5



A B C D E

P6



A B C D E

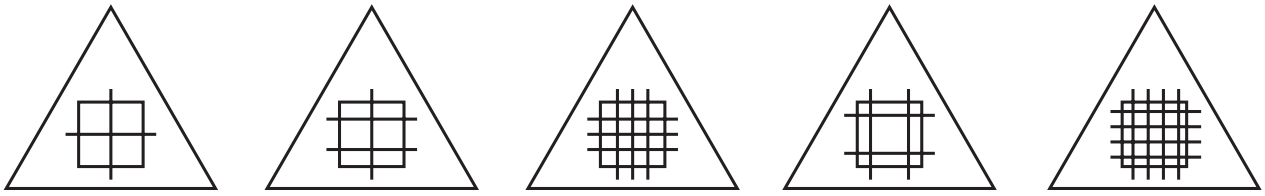
This is the end of NVR Sub-test 3 Practice Section.

NVR Sub-test 3

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

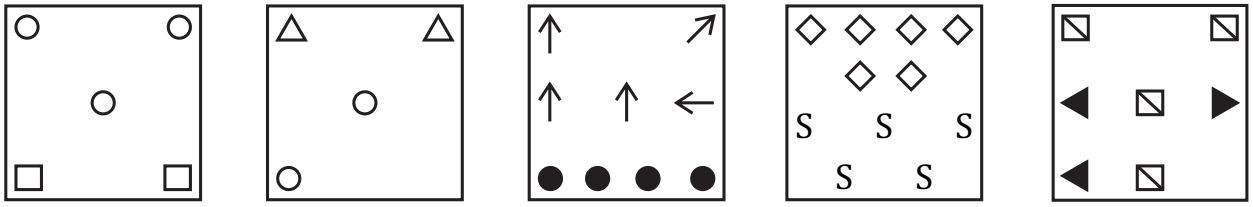
In each of the rows below there are five figures. Find the figure in each row that is most unlike the other four and mark its letter on the answer sheet.

11



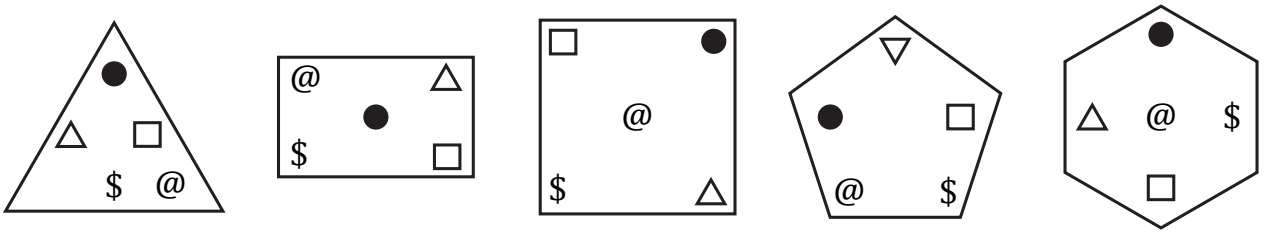
A B C D E

12



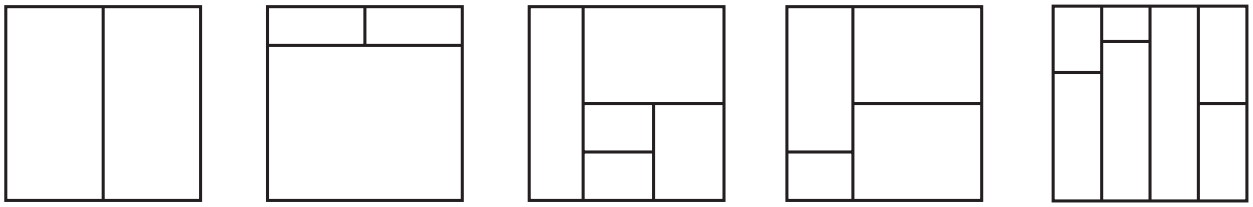
A B C D E

13



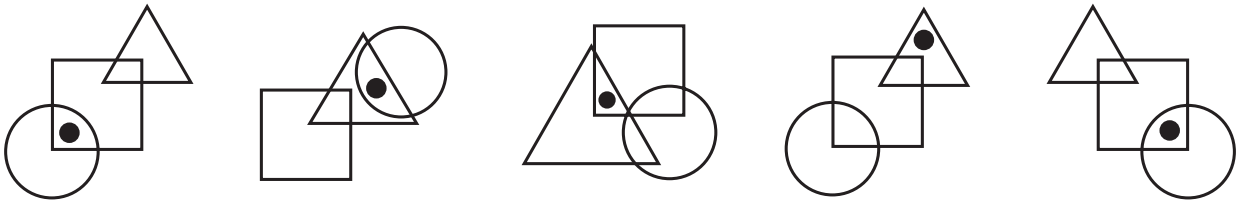
A B C D E

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

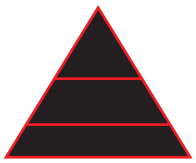
Take as much time as you need to read this example carefully and complete the practice question that follows.

A solid shape is shown on the left. On the right, there are five sets of smaller shapes. One of these sets can be combined to form the given shape. Identify the correct set of shapes.

Example

A B C D E

*The correct answer is **A***
The shapes in option A can be arranged perfectly to form the solid triangle on the left. Each smaller shape fits together without gaps or overlaps to recreate the full solid shape.

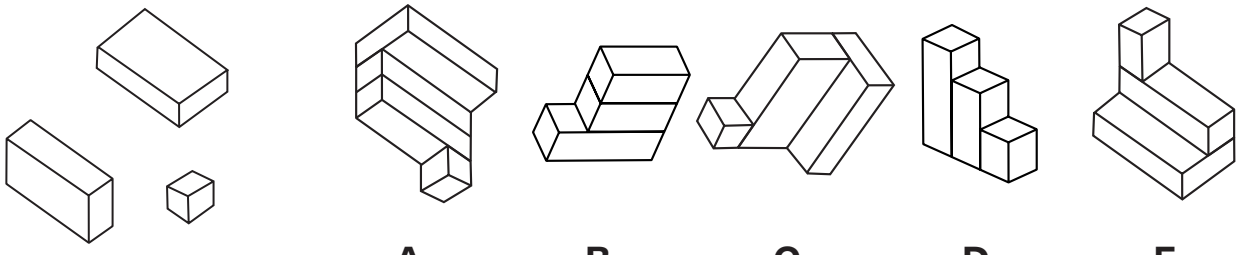


Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P1

A B C D E

P2



A B C D E

This is the end of 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 solid shape is shown on the left. On the right, there are five sets of smaller shapes. One of these sets can be combined to form the given shape. Identify the correct set of shapes and mark its letter on your answer sheet.

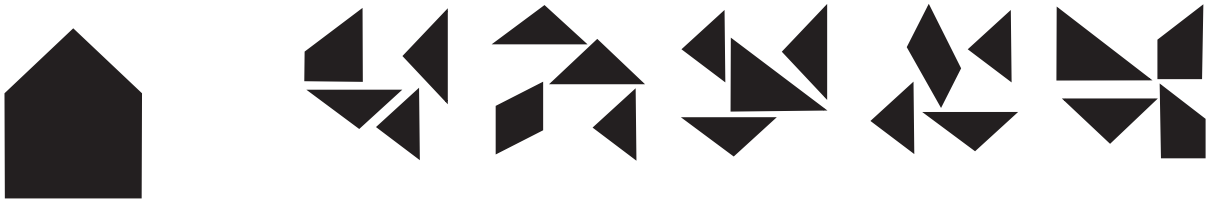
1

A B C D E

2

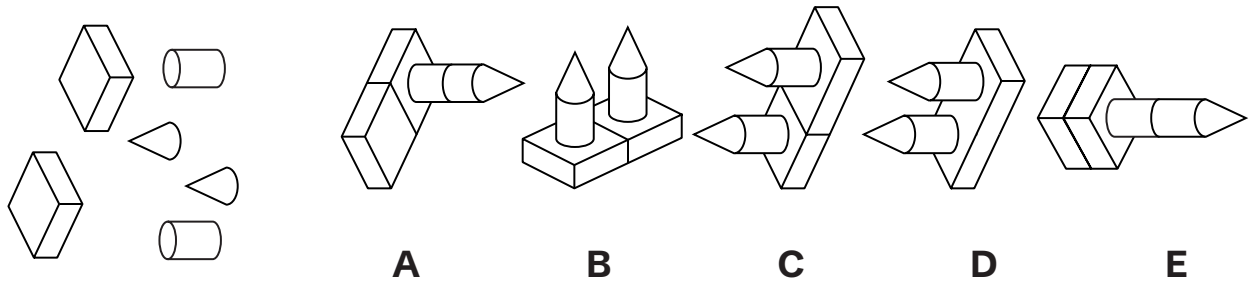
A B C D E

3

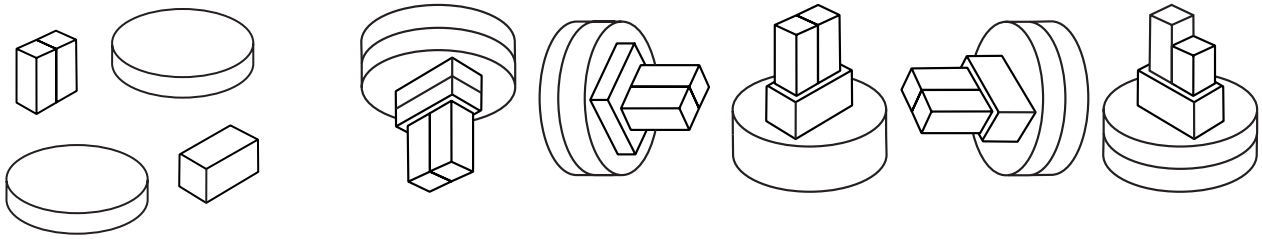


A B C D E

4



5



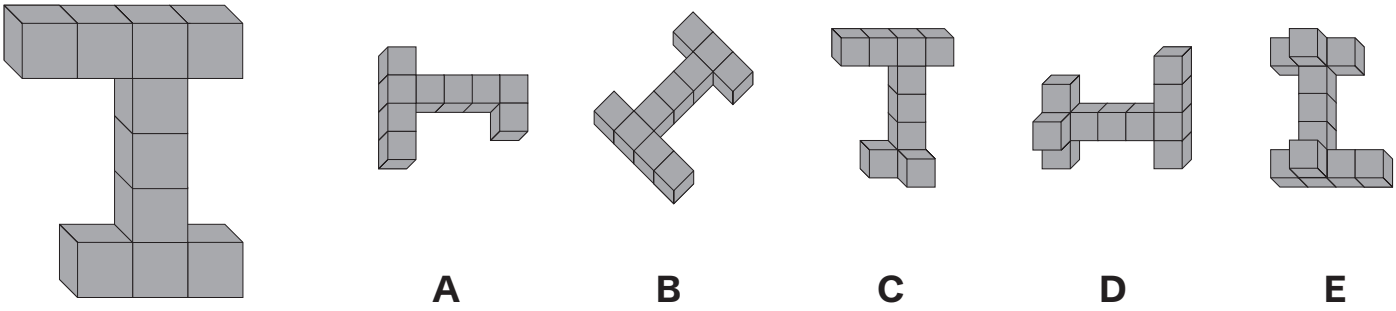
This is the end of Spatial Reasoning Sub-test 1.

Spatial Reasoning Sub-test 2 Practice Section

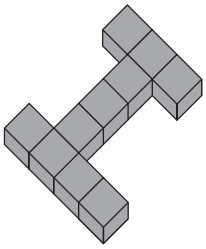
Take as much time as you need to read this example carefully and complete the practice question that follows.

A 3D shape is shown on the left. On the right, there are five answer choices, each showing a possible rotation of the given shape. One of them is the correct rotated version. Identify the correct rotated figure.

Example

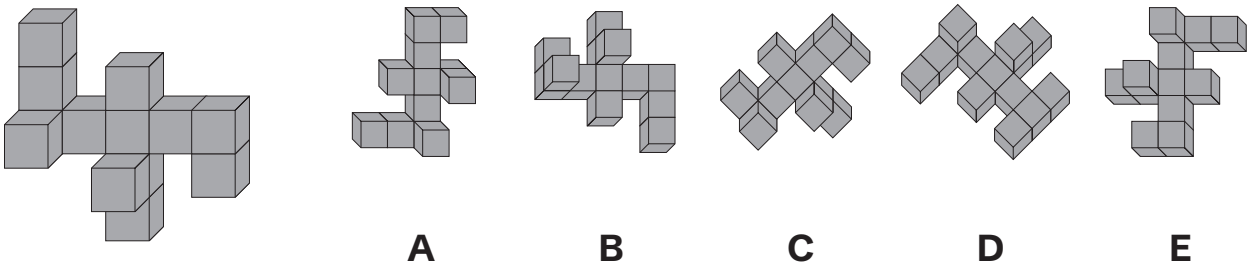


*The correct answer is **B**.*
*Option **B** shows the shape rotated correctly in three dimensions.*
*The arrangement and connections between the cubes match the original shape when rotated. Other options do not maintain the same structure after rotation. Therefore, option **B** is the correct rotated figure.*



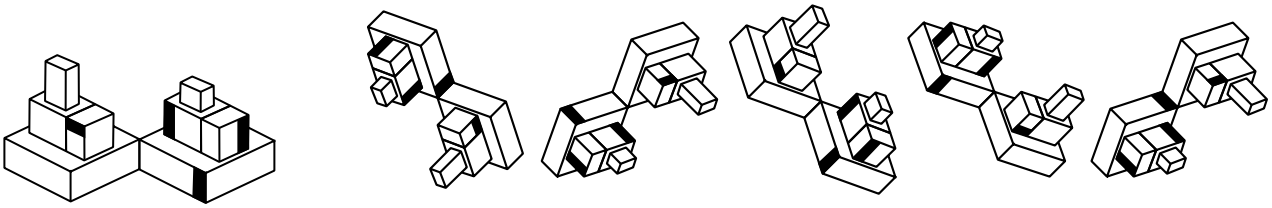
Now try the practice questions below. Work out the correct answer and mark it on the answer sheet.

P3



A B C D E

P4



A B C D E

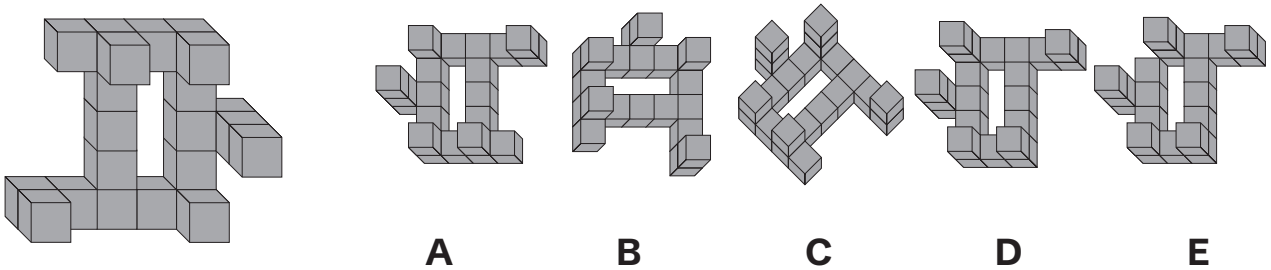
This is the end of Spatial Reasoning Sub-test 2 Practice Section.

Spatial Reasoning Sub-test 2

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

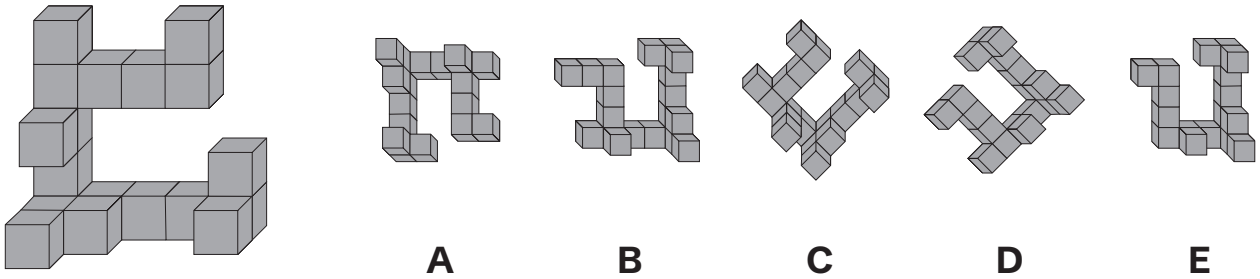
A 3D shape is shown on the left. On the right, there are five answer choices, each showing a possible rotation of the given shape. One of them is the correct rotated version. Identify the correct rotated figure and mark its letter on your answer sheet.

6



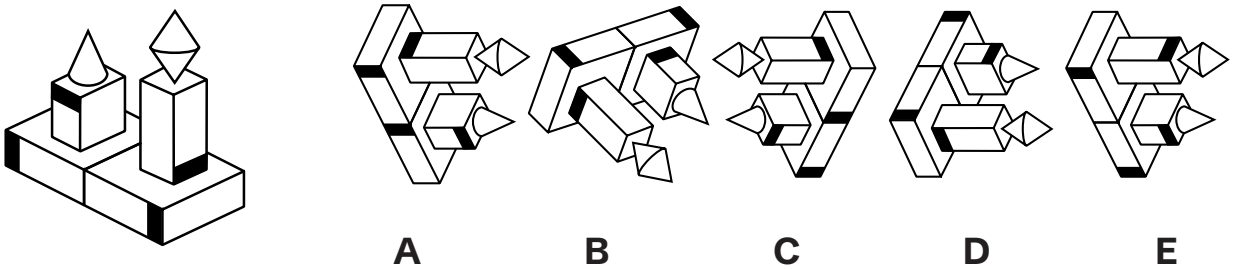
A B C D E

7



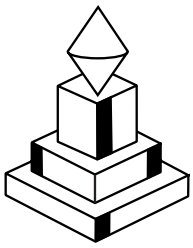
A B C D E

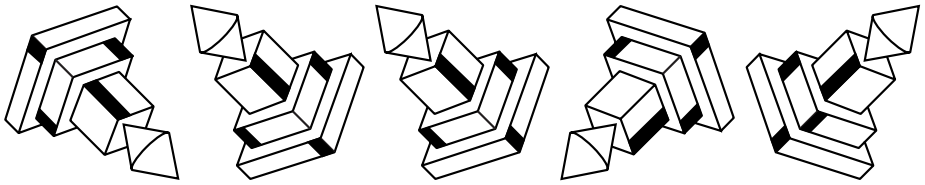
8



A B C D E

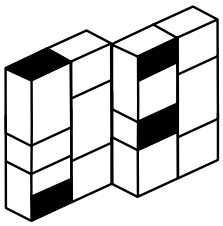
9

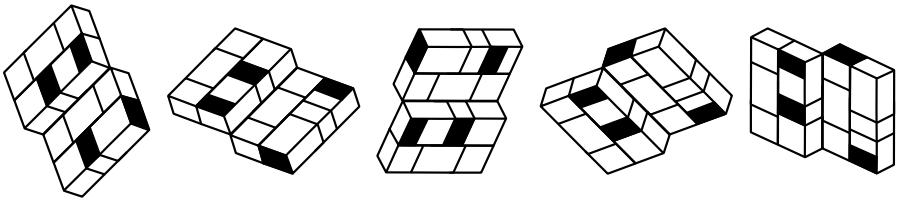




A B C D E

10





A B C D E

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

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Session 2 - Test 3
Paper 3 - 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.

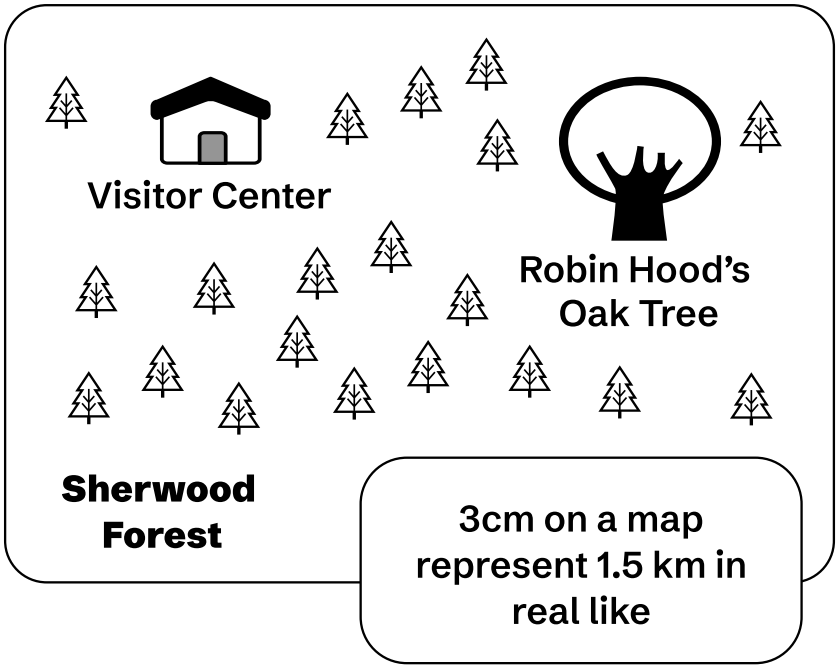
P1

Work out $\sqrt{121} + 3^2$

A 18 **B** 20 **C** 24 **D** 11 **E** 9

P2

3 cm on a map of Sherwood Forest represents 1.5 km in real life.



How far apart are the Visitor Centre and Robin Hood's Oak Tree if they are 12 cm apart on the map?

A 4.5 km **B** 6 km **C** 12 km **D** 18 km **E** 24 km

P3 Pizza Palace prices are shown in the table below

Sandwich type	price (£)	filling	price (£)
White bread	1.80	**cheese**	0.70
brown bread	2.00	**ham**	0.90
baguette	2.30	**tuna**	1.10
wrap	2.20	**chicken**	1.20
sourdough	2.40	**egg**	0.60

Oliver orders a sandwich with one type of bread and two different fillings. The total cost of Oliver's order is £3.50.

What did Oliver order?

A White bread with ham and egg

B Brown bread with cheese and egg

C Baguette with cheese and egg

D Wrap with cheese and egg

E Sourdough with cheese and ham

P4 I roll a fair six-sided die that has the numbers 1, 2, 3, 4, 5, and 6 on its faces. At the same time, I spin a fair spinner that is divided into three equal sections numbered 1, 3, and 5. Then I add the two numbers.

If I do this 90 times, how many times would you expect me to get a total of 9?

A 8 **B** 10 **C** 12 **D** 15 **E** 20

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**.*

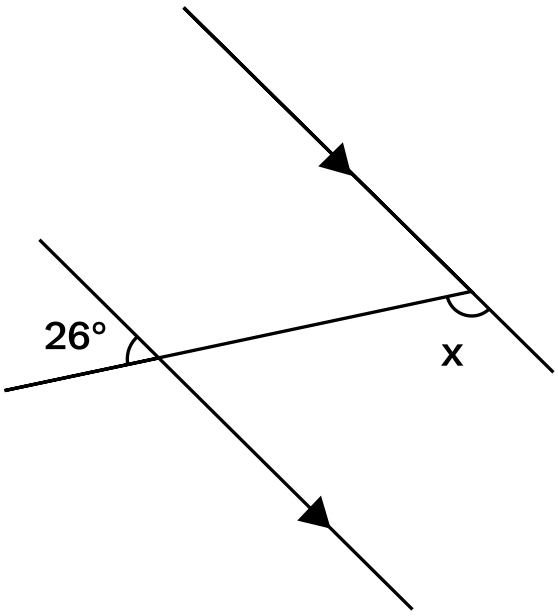
1 It takes 2 hours and 10 minutes to travel from Cambridge to London by coach. However, the same journey by train takes just 55 minutes.

How much time would I save by travelling on the train?

A 65 minutes **B** 85 minutes **C** 75 minutes

D 95 minutes **E** 115 minutes

2 **Find the angle marked with x in the figure below.**



A 142° **B** 154° **C** 126° **D** 162° **E** 160°

3 A magician asks you to choose a secret number. First, double your number, then add 8, and finally divide by 2.

If the result is 11, what was your original secret number?

A 5 **B** 6 **C** 7 **D** 8 **E** 9

4 A boy rides his bicycle to school. First, he goes uphill for 2 km at 5 km/h. Then he cycles through the park on a flat path for 4 km at 10 km/h. Finally, he rides downhill for 3 km at 15 km/h.

How long does his whole journey to school take?

A 1 hour **B** 1 hour 5 minutes **C** 58 minutes

D 1 hour 2 minutes **E** 55 minutes

5 **Which pair of numbers are both factors of 1287?**

A 7 and 23 **B** 11 and 13 **C** 6 and 18

D 9 and 14 **E** 12 and 107

6 A fruit salad is made using apples and bananas in the ratio 3 : 2.

How many grams of apples are needed to make 500 grams of fruit salad?

A 200 **B** 250 **C** 300 **D** 350 **E** 400

7 **Find the mean of the following set of numbers.**

4, 8, 10, 14

A 9 **B** 10 **C** 8 **D** 7 **E** 11

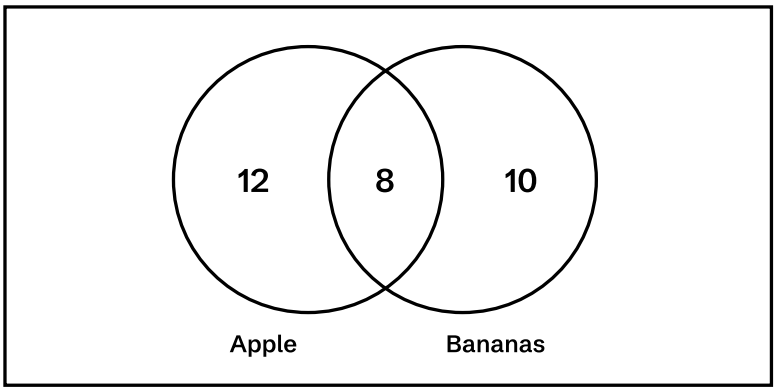
8 In the school fundraising fair, different activities earn different amounts for charity.

- 4 book sales earn the same as 5 cake stalls.
- 3 raffle ticket booths earn the same as 6 book sales.
- 5 cake stalls earn the same as 8 game booths.
- 12 book sales plus 9 raffle ticket booths earn the same as 20 cake stalls plus y game booth

What is the value of y?

A 26 **B** 27 **C** 28 **D** 29 **E** 30

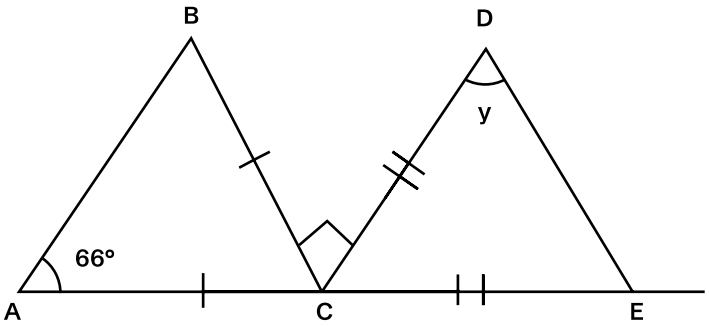
9 A group of 30 students were asked whether they liked apples or bananas. The results are shown in the Venn diagram below.



How many students like only bananas?

A 10 **B** 4 **C** 6 **D** 12 **E** 8

10 **Find the size of the angle marked y.**



A 60° **B** 64° **C** 66° **D** 62° **E** 69°

11 I have 7 yellow pens and 3 blue pens in a box.

What is the probability of selecting a blue pen when I take a pen out of the box?

A $\frac{1}{2}$ **B** $\frac{3}{10}$ **C** $\frac{7}{10}$ **D** $\frac{3}{7}$ **E** $\frac{7}{3}$

12 **Which correctly shows 72.84 rounded to the nearest whole number?**

A 72 **B** 73 **C** 72.8 **D** 72.9 **E** 73.0

13 The difference between $\frac{1}{2}$ of a certain number and $\frac{1}{6}$ of the same number is 12.

What is the number?

A 32 **B** 36 **C** 40 **D** 42 **E** 48

14 A rectangular garden has an area of 84 m^2. The width of the garden is 6 m.

How long is it?

A 12 m **B** 13 m **C** 14 m **D** 15 m **E** 16 m

15 Thomas the carpenter needs to build a bookshelf with 12 planks wide and 7 planks high. He can attach 4 planks every 3 minutes.

How long will it take him to build the bookshelf?

A 42 minutes **B** 45 minutes **C** 63 minutes

D 84 minutes **E** 126 minutes

16 Oliver is preparing ingredients for a school baking competition. He purchases 60 grams of chocolate chips in total. He uses two fifths of these chips for his chocolate biscuits. He then uses 6 additional grams for decoration on top, and finds he only needs five-sixths of the remaining chocolate chips for his brownies.

How many grams of chocolate chips will be left unused?

A 5 **B** 4 **C** 3 **D** 7 **E** 6

17 Ellie is making cupcakes for a birthday party and needs to buy cupcake cases and sprinkles. A pack of cupcake cases costs £1.25. A container of sprinkles costs 85p. If Ellie has £8 and buys only cupcake cases and sprinkles and this leaves her with £1.30 change.

How many of each must she have bought?

A 3 packs of cupcake cases, 3 containers of sprinkles

B 4 packs of cupcake cases, 2 containers of sprinkles

C 2 packs of cupcake cases, 5 containers of sprinkles

D 5 packs of cupcake cases, 1 container of sprinkles

E 1 pack of cupcake cases, 6 containers of sprinkles

18 Roasting a chicken takes 20 minutes per pound.
If a $3\frac{1}{2}$ pound chicken is to be served at 7:15pm.

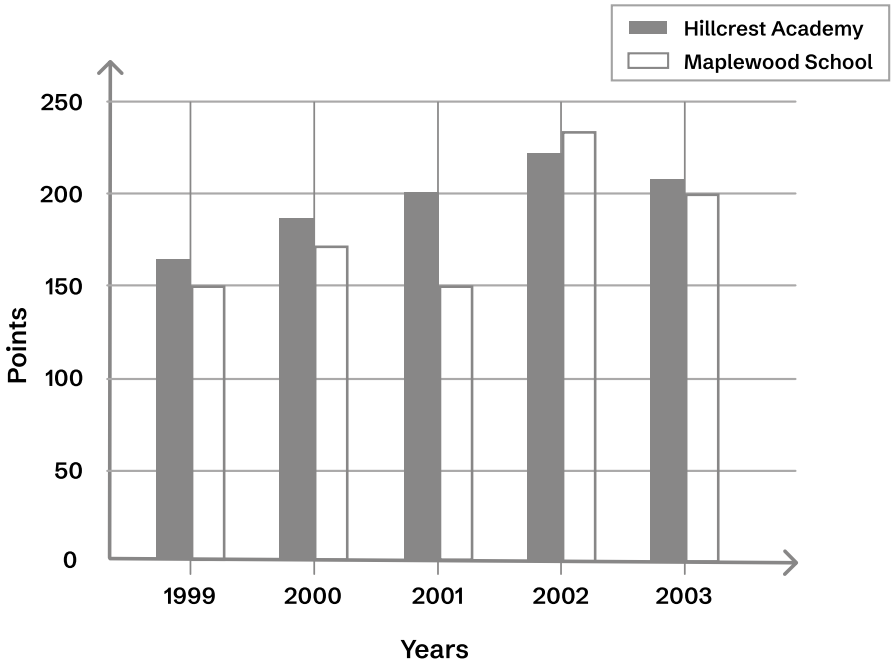
What time should it be put in the oven?

A 5:05pm **B** 6:05pm **C** 6:15pm **D** 6:10pm **E** 6:00pm

19 **What is the half of $3\frac{4}{5}$?**

A $1\frac{9}{10}$ **B** $1\frac{4}{5}$ **C** $1\frac{3}{10}$ **D** $1\frac{7}{10}$ **E** $1\frac{8}{10}$

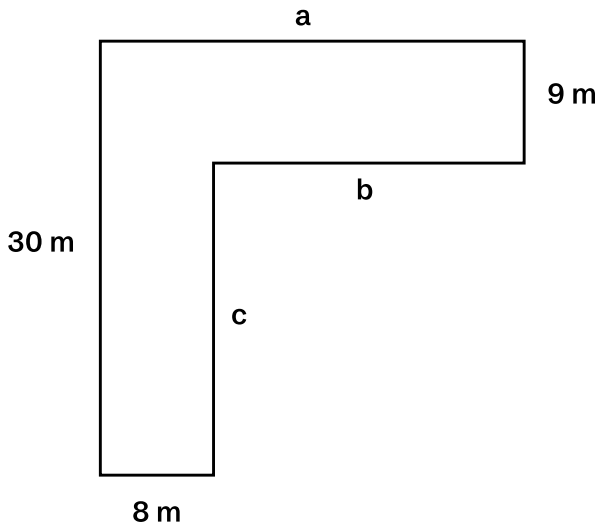
20 Each year, two schools, Hillcrest Academy beat Maplewood School, hold a quiz. The bar chart below shows the results over five years.



In which year did Hillcrest Academy beat Maplewood School by 50 points?

A 1999 **B** 2000 **C** 2001 **D** 2002 **E** 2003

21 The diagram shows the plan of a garden.



The perimeter of the garden is 90 m.

Calculate the area of the garden.

A 305 m^2 **B** 320 m^2 **C** 303 m^2 **D** 285 m^2 **E** 294 m^2

22 **If x = 4, y = -1 and z = 3, find the value of $2xy - z^2$.**

A -17 **B** -9 **C** -11 **D** -15 **E** -13

23 For every five chocolate biscuits in a packet, there are three vanilla biscuits. If a large packet contains 30 chocolate biscuits.

How many vanilla biscuits are there in the packet?

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

This is the end of the Test 3 - Maths.

Visit piacademy.co.uk/11-plus-papers to check the 'answers'

PiAcademy

Bucks Paper 3 Session 2

Answer Marking Sheet

Pupil's Name

School Name

DATE OF TEST

Day | Month | Year

UNIQUE PUPIL NUMBER

SCHOOL NUMBER

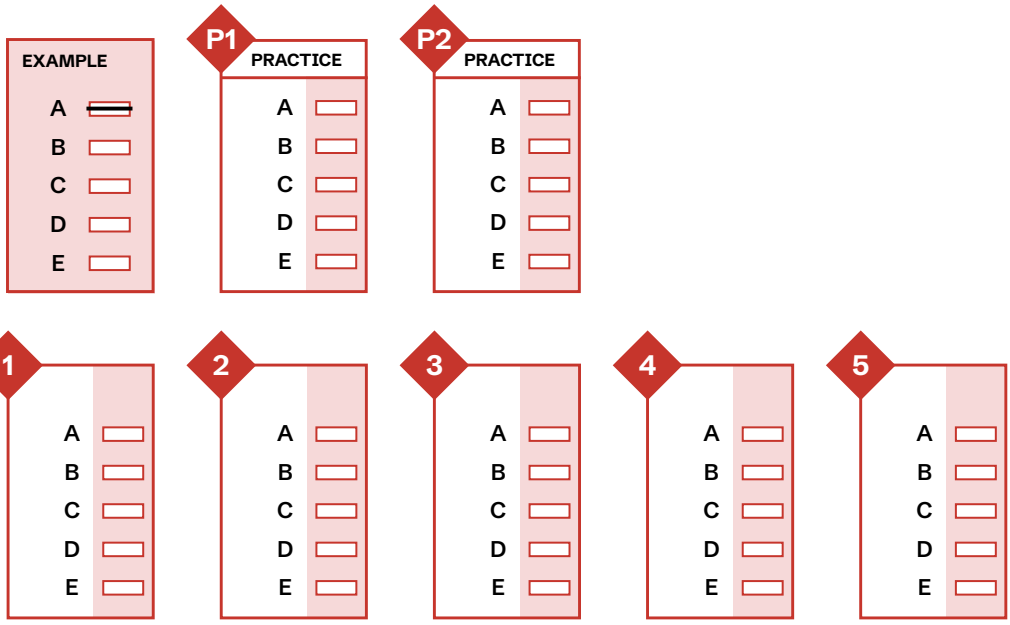
DATE OF BIRTH

Day | Month | Year

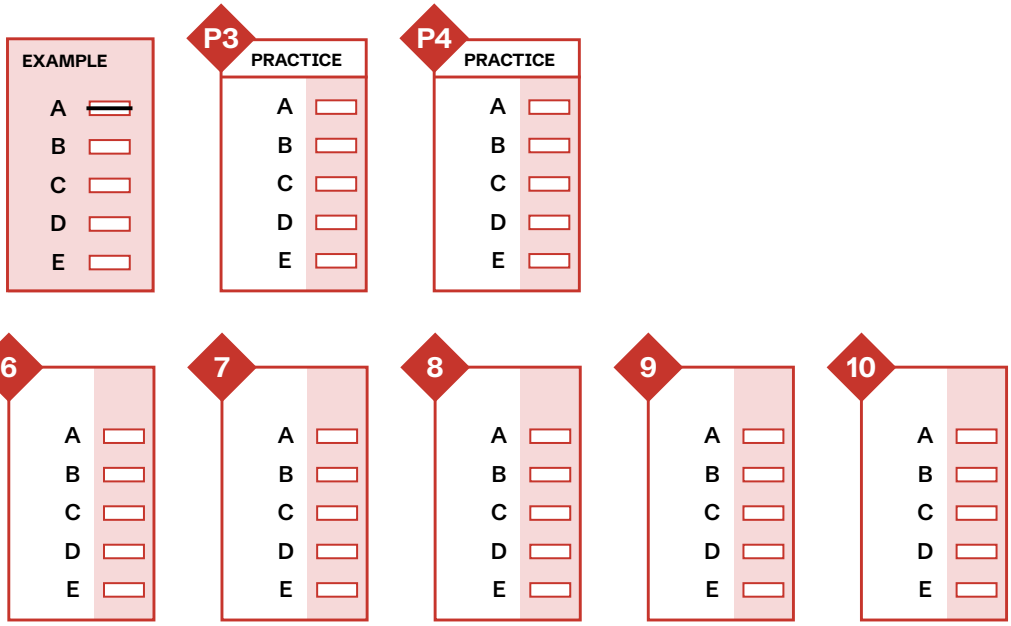
Please mark boxes with a thin horizontal line like this ▬ .

Test 1 - Non Verbal Reasoning

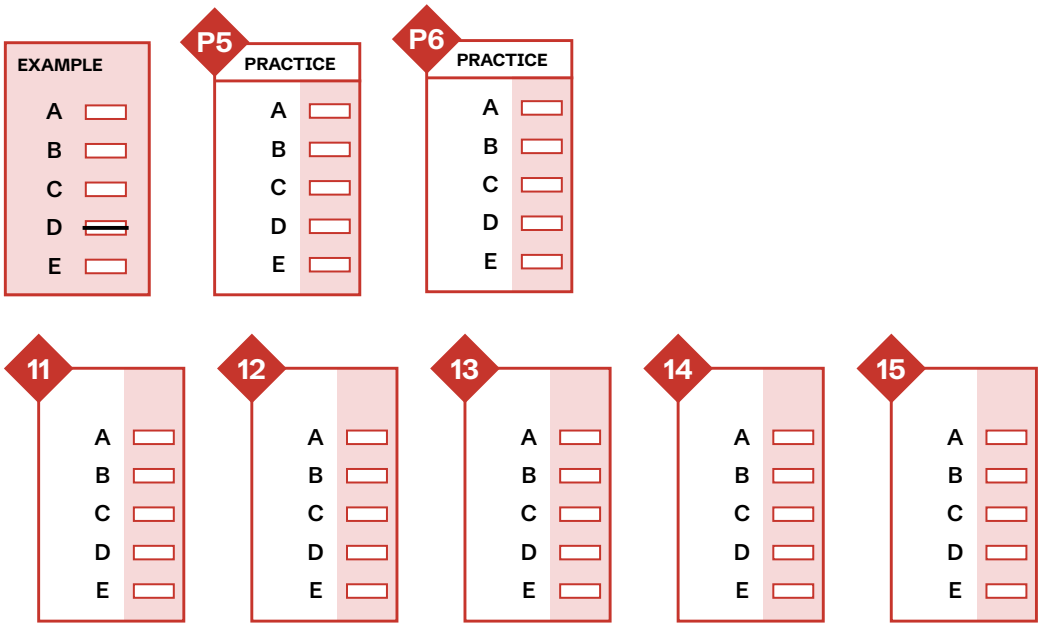
Sub-test 1



Sub-test 2



Sub-test 3


EXAMPLE
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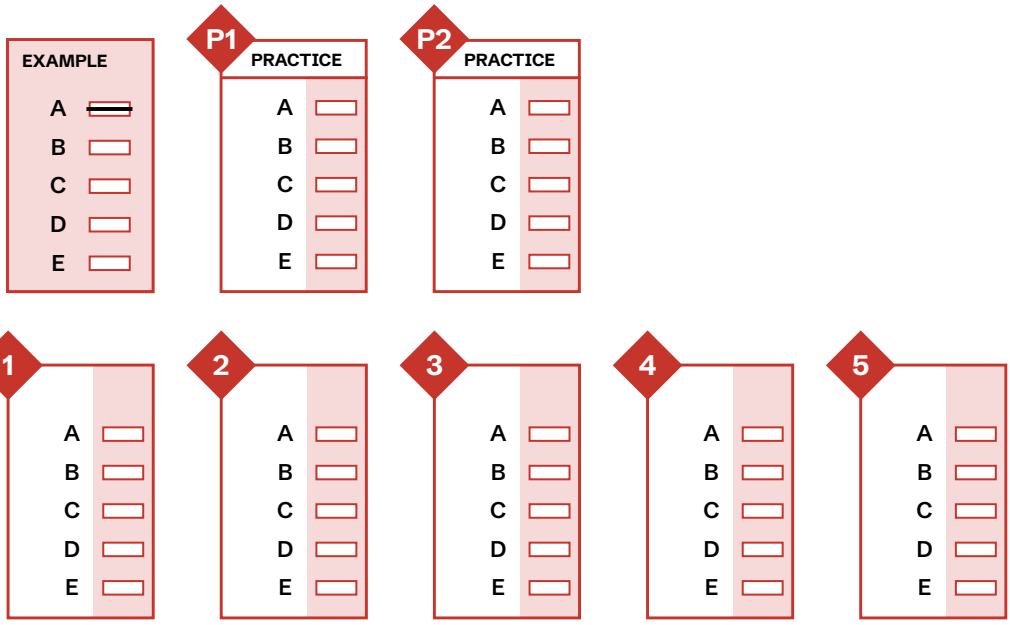
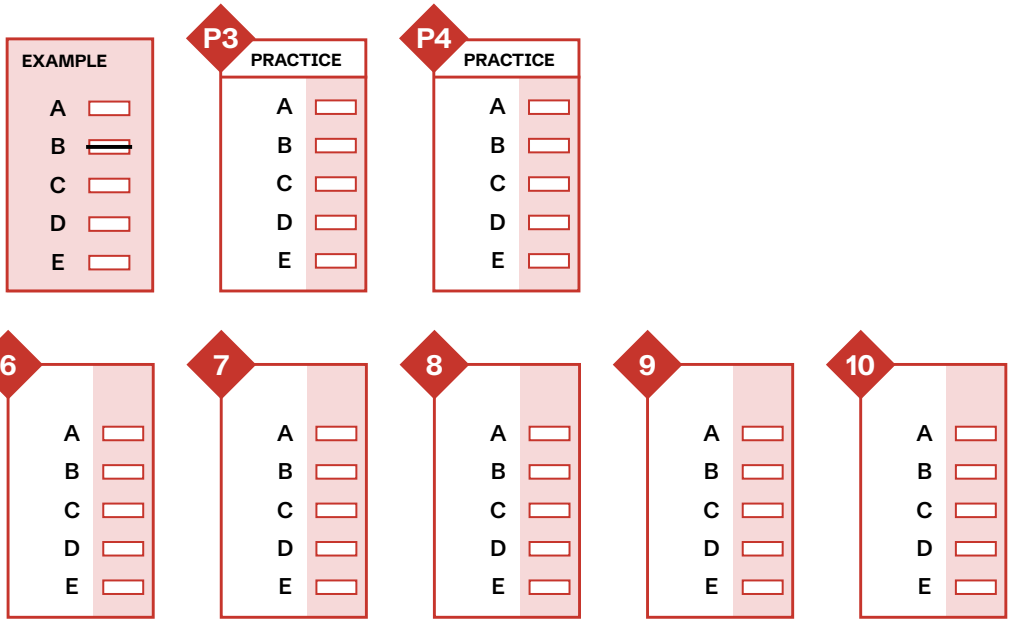
Test 2 - Spatial Reasoning

Sub-test 1



Sub-test 2



Test 3 - Maths

P1 PRACTICE
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P2 PRACTICE
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P4 PRACTICE
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For Parents use only

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

Comments _____

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_____

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