OCR
Oxford Cambridge and RSA

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GCSE (9–1) Mathematics

J560/01 Paper 1 (Foundation Tier)

Practice Paper

Date – Morning/Afternoon

Time allowed: 1 hour 30 minutes

You may use:
- A scientific or graphical calculator
- Geometrical instruments
- Tracing paper

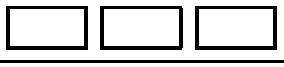
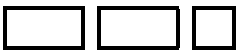
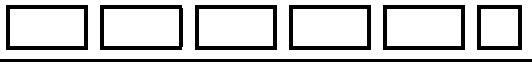
First name									
Last name									
Centre number						**Candidate number**				

INSTRUCTIONS
- Use black ink. You may use an HB pencil for graphs and diagrams.
- Complete the boxes above with your name, centre number and candidate number.
- Answer **all** the questions.
- Read each question carefully before you start your answer.
- Where appropriate, your answers should be supported with working. Marks may be given for a correct method even if the answer is incorrect.
- Write your answer to each question in the space provided.
- Additional paper may be used if required but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

INFORMATION
- The total mark for this paper is **100**.
- The marks for each question are shown in brackets **[ ]**.
- Use the π button on your calculator or take π to be 3.142 unless the question says otherwise.
- This document consists of **24** pages.

Answer **all** the questions

1 Leah asked some people about their favourite type of holiday.
The pictogram shows her results.

Beach	
Walking	
Cruising	
Adventure	
Sightseeing	
Other	

Key :  represents 4 people.

(a) How many people answered Beach?

(a) ..... **[1]**

(b) 10 people answered Sightseeing.

Show this on the pictogram. **[1]**

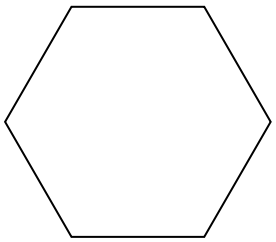
(c) How many **more** people answered Cruising than Other?

(c) ..... **[1]**

(d) How many people were asked altogether?

(d) ..... **[2]**

2 **(a)** Write down the mathematical name of this shape.



(a) ..... **[1]**

(b) How many vertices does a cube have?

(b) ..... **[1]**

(c) Sketch an isosceles triangle.

Mark the triangle to show that it is isosceles. **[1]**

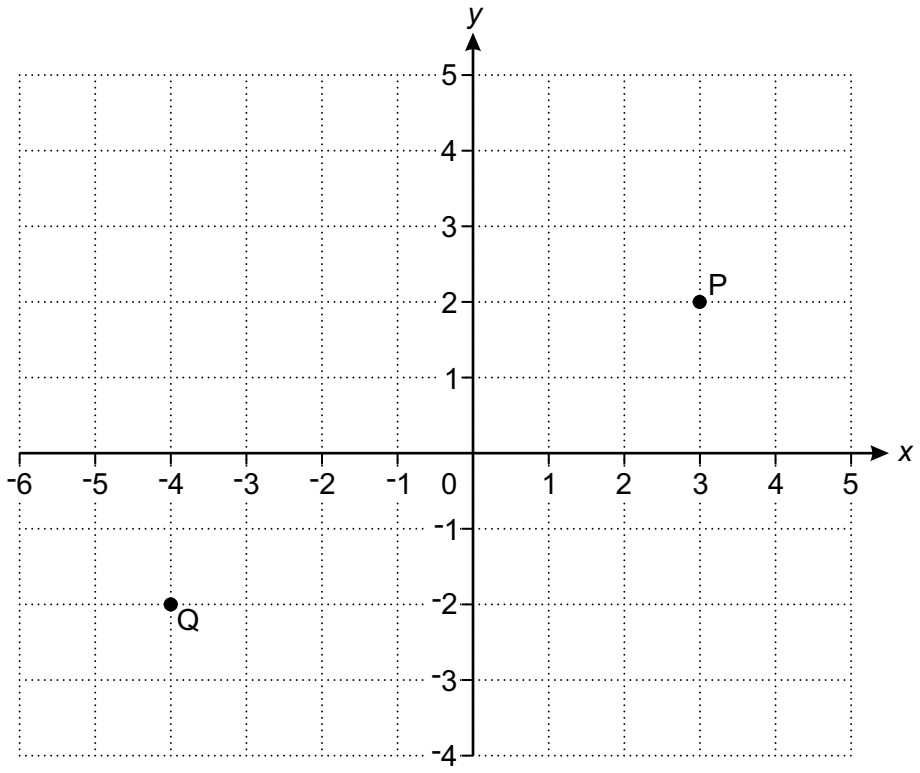
3 Write the following numbers in order of size, smallest first.

60.6 6.601 6.106 0.6 6.06

.... **[2]**

smallest

4 Points P and Q are shown on this grid.



(a) **(i)** Write down the coordinates of point P.

(a)(i) (..... , ...) **[1]**

(ii) Write down the coordinates of point Q.

(ii) (..... , ...) **[1]**

(b) Plot point R at (-2, 0). **[1]**

5 A game is played by rolling a fair ordinary dice and throwing a fair coin.

(a) List all the possible outcomes.

Dice	Coin

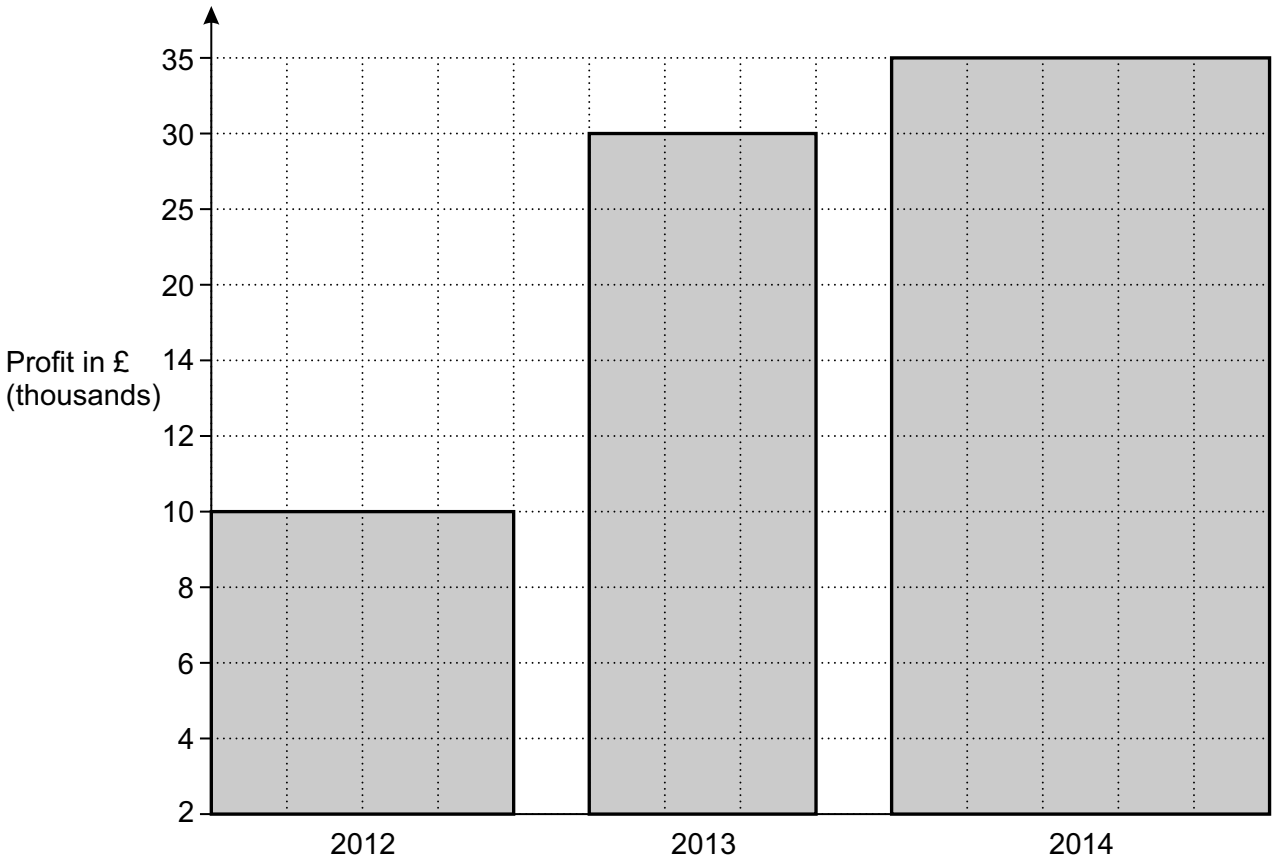
[2]

(b) Natalie wins if she gets an even number and a head.

What is the probability she wins?

(b) ..... **[1]**

6 This chart shows a firm's profit for each of 3 years.



Give **two** reasons why the chart is misleading.

Reason 1 .....

.....

Reason 2 .....

..... **[2]**

7 **(a)** Simplify.

$a \times a \times a \times a \times a$

(a) ..... **[1]**

(b) Solve.

$3x + 7 = 19$

(b) $x =$ ..... **[2]**

(c) Here is a formula.

$T = 5r + 3u$

Work out the value of T when $r = 8$ and $u = 9$.

(c) ..... **[2]**

8 **(a)** **(i)** Write 1.85 metres in centimetres.

(a)(i) ..... cm **[1]**

(ii) Write 2086 grams in kilograms.

(ii) ..... kg **[1]**

(b) In a box of 12 eggs, 5 are cracked.

What fraction is cracked?

(b) ..... **[1]**

(c) **(i)** Write 45 : 15 as a ratio in its simplest form.

(c)(i) ..... : ..... **[1]**

(ii) Divide 32 in the ratio 5 : 3.

(ii) .... **[3]**

(d) The price of a watch is £230.
In a sale this price is reduced by 16%.

Calculate the sale price.

(d) £ ..... **[3]**

9 **(a)** Round 27 146 correct to

(i) the nearest ten,

(a)(i) ..... **[1]**

(ii) the nearest thousand.

(ii) ..... **[1]**

(b) The width of a bench, b, is 984.8 cm correct to one decimal place.

Write down the error interval for the width of the bench.

(b) ..... $\leqslant b <$ ..... **[2]**

(c) **(i)** Write 856 000 000 in standard form.

(c)(i) ..... **[1]**

(ii) Write 4.31×10^{-3} as an ordinary number.

(ii) ..... **[1]**

(d) Work out.

$$\sqrt[3]{27} + \sqrt{25}$$

(d) ..... **[2]**

10 **(a)** Write down a factor of 15.

(a) ..... **[1]**

(b) Write 360 as the product of its prime factors.

(b) ..... **[2]**

(c) Gary's alarm and Ian's alarm both bleep at 7:50 am.
Then Gary's alarm bleeps every 6 minutes and Ian's alarm bleeps every 4 minutes.

What is the next time both alarms bleep together?

(c) ..... **[4]**

11 **(a)** Put brackets in these calculations to make them correct.

(i) $5 - 3 \times 12 \div 4 = 6$ **[1]**

(ii) $6 \times 4 + 3^2 - 5 = 289$ **[1]**

(b) Calculate.

$$\frac{7.5 \times 3.4}{15.2 - 12.8}$$

Give your answer correct to 2 decimal places.

(b) ..... **[2]**

12 Katy organised a wedding.
Guests had to choose their meal from pasta, chicken or beef.

- $\frac{1}{3}$ of the guests chose pasta.
- $\frac{5}{12}$ of the guests chose chicken.
- 24 of the guests chose beef.

How many guests were at the wedding?

..... **[4]**

13 Bridget took a maths test. She scored 28 marks out of 40.
Sam took an English test. He scored 32 marks out of 47.

Sam said

I did better than Bridget as I scored more marks.

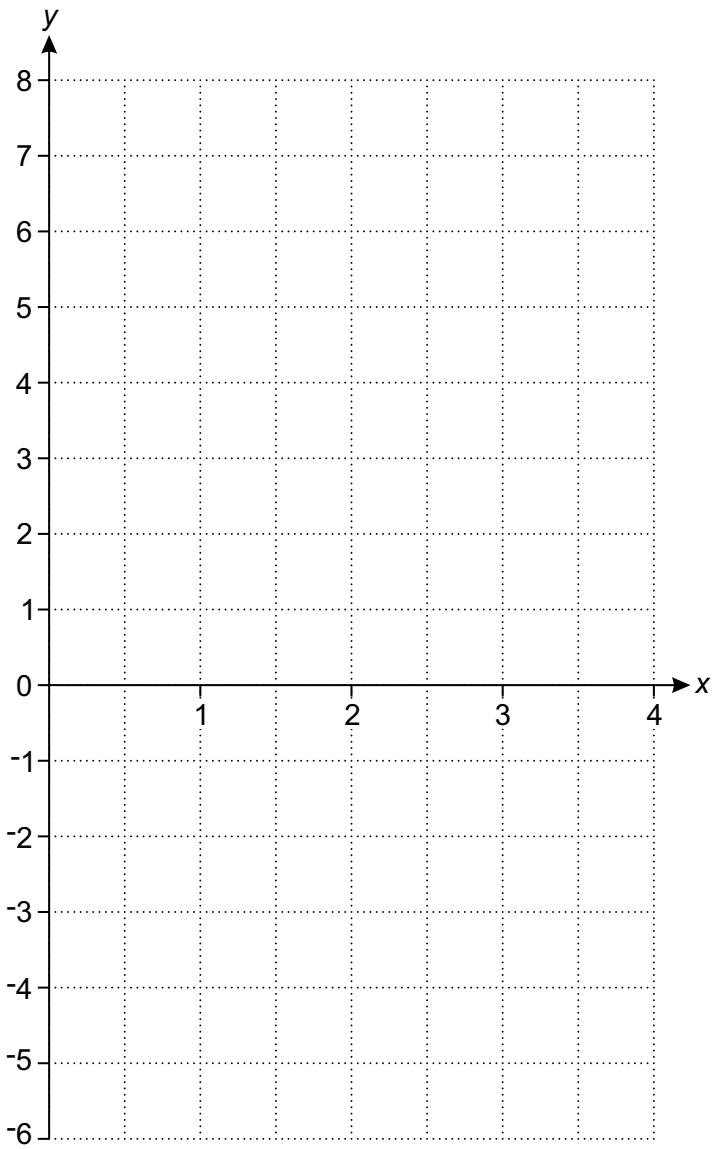
By writing each score as a percentage, show that Sam is wrong. **[3]**

14 **(a)** Complete this table for $y = 2x - 3$.

x	0	1	2	3	4
y	-3		1		5

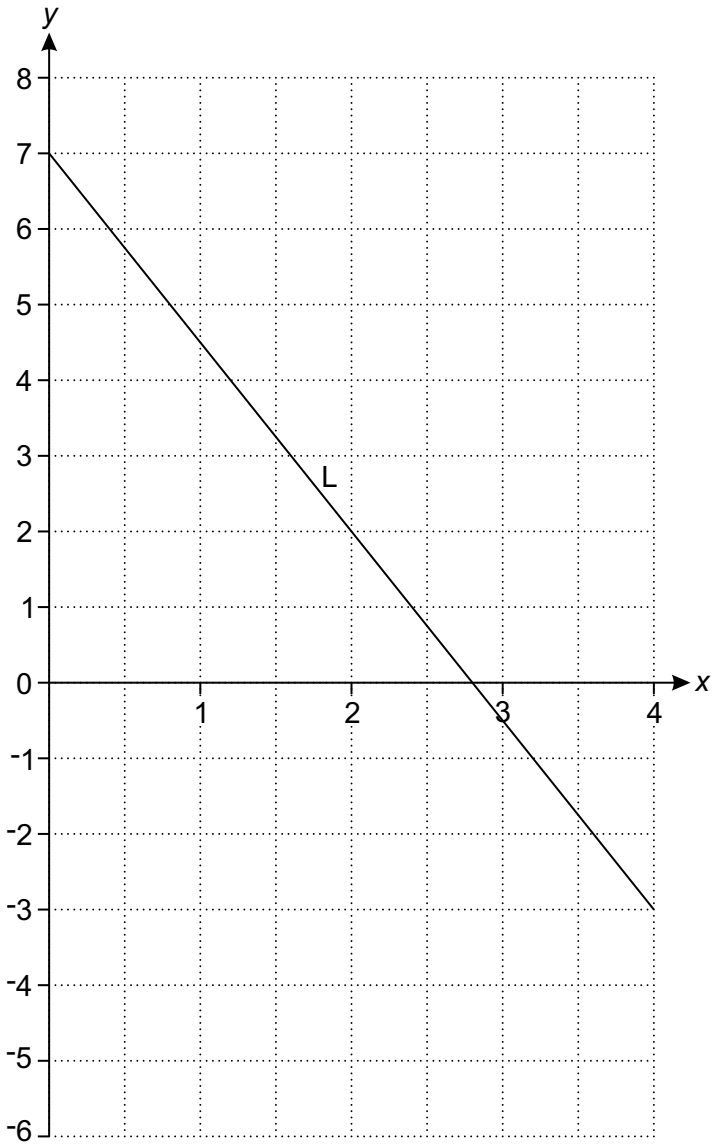
[1]

(b) On the grid below, draw the graph of $y = 2x - 3$ for values of x from 0 to 4.



[2]

(c) Line L is drawn on the grid below.



Work out the equation of line L.

(c) ..... **[3]**

15 Eddie and Caroline are going to the school play.

Eddie buys 6 adult tickets and 2 child tickets. He pays £39.
Caroline buys 5 adult tickets and 3 child tickets. She pays £36.50.

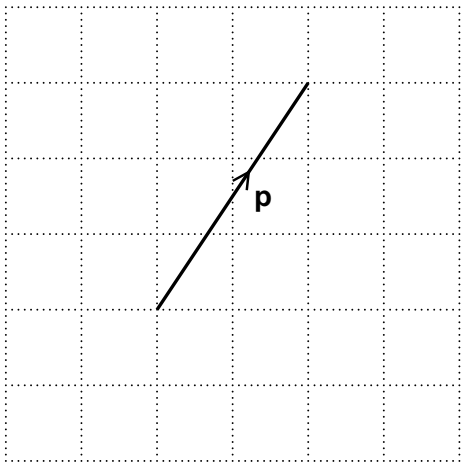
Work out the cost of an adult ticket and the cost of a child ticket.

Adult ticket £ .....

Child ticket £ ..... **[5]**

16 Show that $3r = 2(5k^2 - 2r)$ can be rearranged to $k = \sqrt{\frac{7r}{10}}$. **[4]**

17 (a) Vector **p** is shown on a unit grid.



Write **p** as a column vector.

(a) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ **[1]**

(b) $\mathbf{q} = \begin{pmatrix} -2 \\ 4 \end{pmatrix}$ $\mathbf{r} = \begin{pmatrix} 5 \\ -3 \end{pmatrix}$

Work out $\mathbf{q} + \mathbf{r}$.

(b) $\begin{pmatrix} \quad \\ \quad \end{pmatrix}$ **[2]**

18 A shop has a sale that offers 20% off all prices.
On the final day they reduce all sale prices by 25%.
Alex buys a hairdryer on the final day.

Work out the **overall** percentage reduction on the price of the hairdryer.

..... % **[6]**

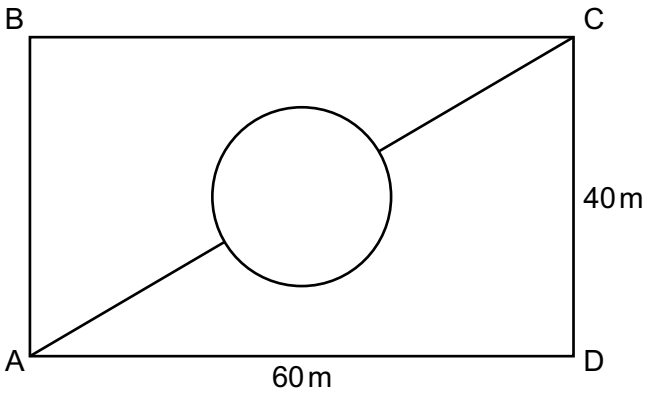
19 Some of the children at a nursery arrive by car.

- 40% of the children at the nursery are boys.
- 70% of the boys at the nursery arrive by car.
- 60% of the girls at the nursery arrive by car.

What is the probability that a child chosen at random from the nursery arrives by car?

..... **[5]**

20 The rectangle ABCD represents a park.



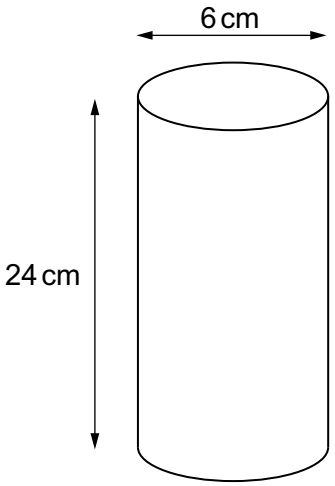
Not to scale

The lines show all the paths in the park.
The circular path is in the centre of the rectangle and has a diameter of 10 m.

Calculate the shortest distance from A to C across the park, using only the paths shown.

..... m **[6]**

21 Four solid balls are packed in a cylindrical container.



The diameter of each ball is 6 cm.
The cylinder has diameter 6 cm and height 24 cm.

Calculate the volume of unused space in the cylinder.

[The volume V of a sphere is $V = \frac{4}{3}\pi r^3$ where r is the radius.]

..... cm^3 **[6]**