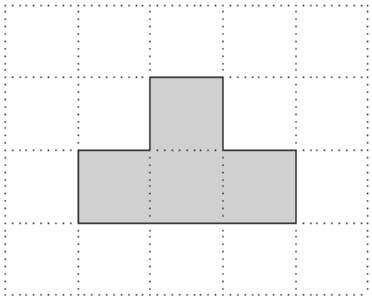
Oxford Cambridge and RSA

# GCSE Mathematics - Paper 3 (Foundation tier)

**J560/03** Paper 3 Mathematics (Foundation Tier)

## Question Set 2

**1** A shape is drawn on a one-centimetre grid.



**(a)** Find the perimeter of the shape.

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

**(b)** How many lines of symmetry does the shape have?

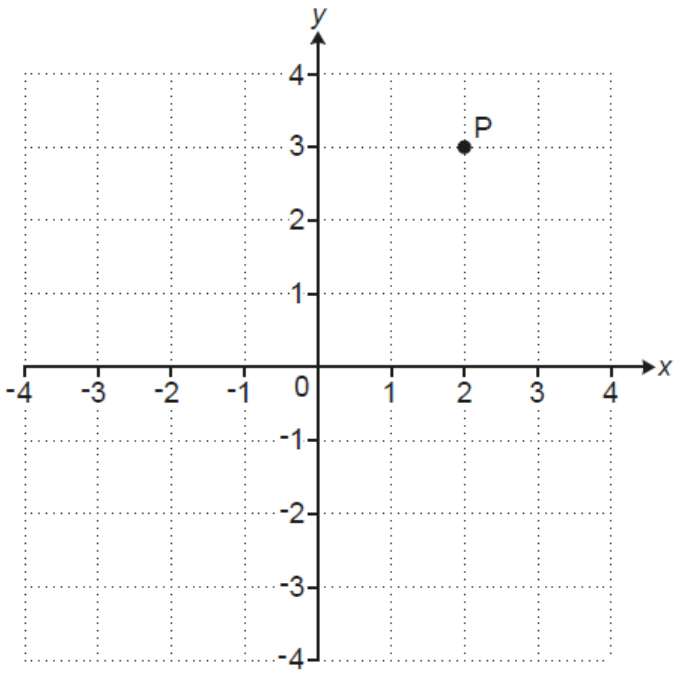
**(b)** ..... **[1]**

**2** Insert brackets to make each of these calculations correct.

$5 \times 3 - 1 = 10$

$3 + 6 - 2 \div 2 = 3.5$ **[2]**

**3** Point P is shown on this grid.




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

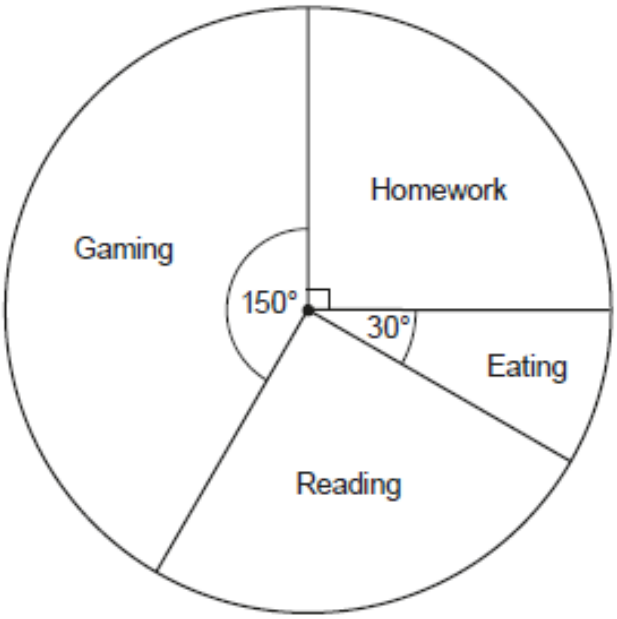
**(a)** (..... , .....) **[1]**

**(b)** Draw the line $x = -2$ on the grid. **[1]**

**4** Find the value of $3g - h$ when $g = 4$ and $h = 5$.

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

**5** The pie chart shows how Jack spent his time one evening.




**(a)** On which activity did Jack spend most time?

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

**(b)** Jack says

I spent $\frac{1}{3}$ of my time on Gaming.

Show that he is not correct.

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

**(c)** The pie chart represents 5 hours.

Find the time, in hours and minutes, that Jack spent reading.

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

**6** Solve.

$4x + 5 = 35$

$x =$ ..... **[2]**

**7** Delroy drives 240 miles.
His car averages 40 miles per gallon of petrol.
Petrol costs £1.30 per litre.

1 gallon is 4.5 litres.

How much does Delroy spend on petrol for this journey?

£ ..... **[4]**

**8** **(a)** 50 sweets weigh 200 g.

If each sweet weighs the same, work out the weight of 7 sweets.

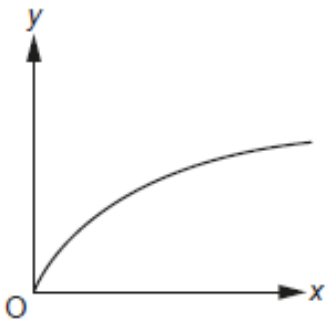
**(a)** ..... g **[2]**

**(b)** $b$ is directly proportional to $a$.
$b$ is 10 when $a$ is 8.

Work out $b$ when $a$ is 9.

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

**(c)** A graph is drawn below.

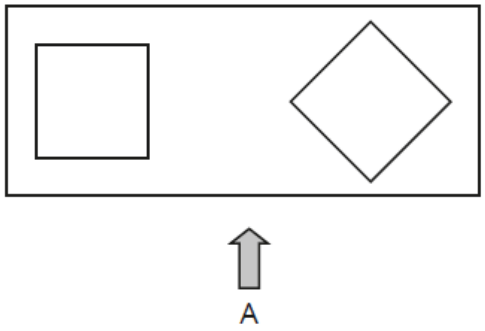



Explain how you know that y is not directly proportional to $x$.

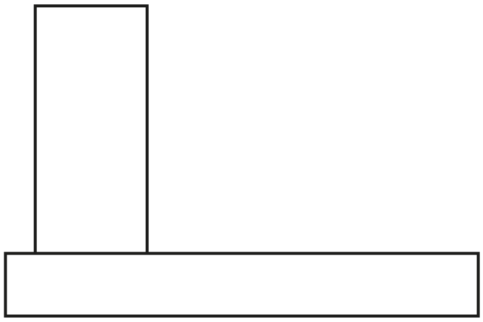
.....

..... **[1]**

**9** This is the plan view of a 3D object.




Complete the diagram below to show the front view of the 3D object from A.



**[2]**

**10** A grain of salt weighs $6.48 \times 10^{-5}$ kg on average.
A packet contains 0.35 kg of salt.

**(a)** Use this information to calculate the number of grains of salt in the packet.

**(a)** ..... **[2]**

**(b)** Explain why your answer to part **(a)** is unlikely to be the actual number of grains of salt in the packet.

.....

.....

..... **[1]**

**11** Sophie is organising a raffle.

- Each raffle ticket costs 50p.
- She sells 400 tickets.
- The probability that a ticket, chosen at random, wins a prize is 0.1.
- Each winning ticket receives a prize worth £3.

Sophie says

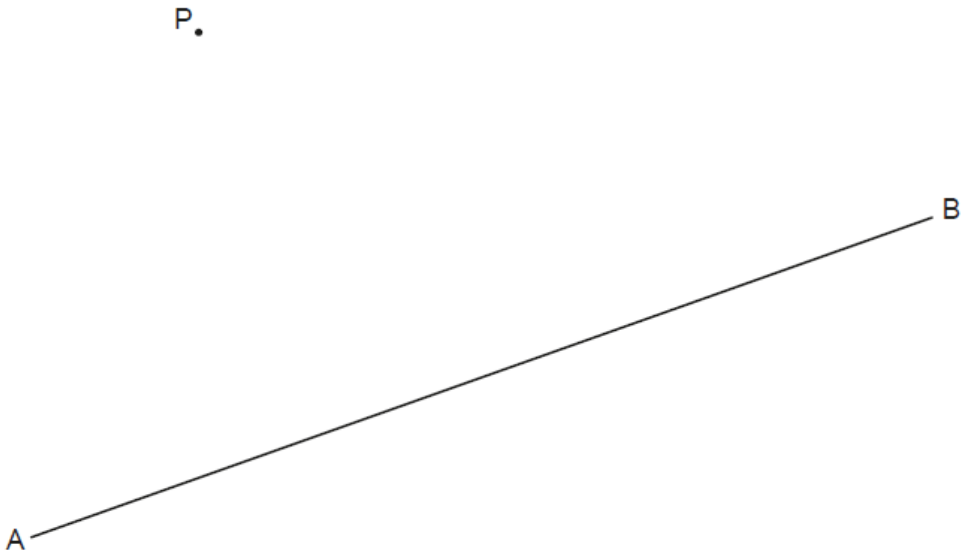
I expect the raffle to make over £100 profit.

Show that Sophie is wrong.

.....

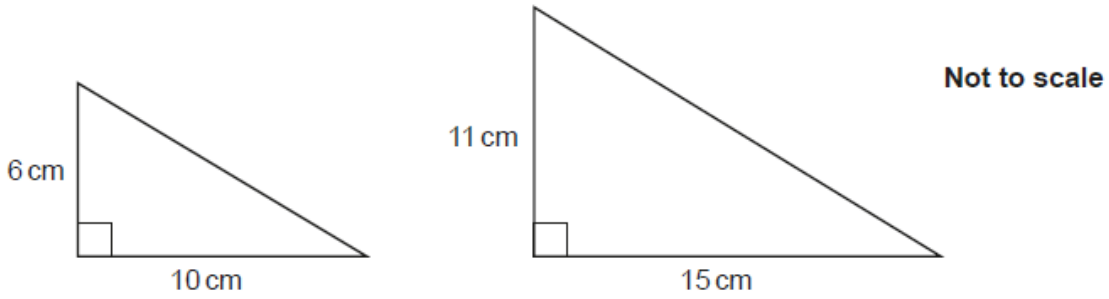
..... **[4]**

**12** Construct the perpendicular from the point P to the line AB.
Show all of your construction lines.




**[2]**

**13** Are these two triangles mathematically similar?
Show how you decide.




..... because .....

.....

.....

..... **[3]**

**14** **(a)** A number, $g$, is given as 4.05, correct to 2 decimal places.

Complete the error interval for $g$.

**(a)** ..... $\leqslant g <$ ..... **[2]**

**(b)** A number, $h$, is given as 3, truncated to 1 significant figure.

Complete the error interval for $h$.

**(b)** $3 \leqslant h <$ ..... **[1]**

15 **(a)** Simplify.

**(i)** $h^3 \times h^{-3}$

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

**(ii)** $\dfrac{f^9}{f^3}$

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

**(b)** The length of each side of a plastic cube is $2a$ millimetres.
The cube has mass $32a^2$ grams.

Find an expression for the density of the cube in its simplest form.
Give the units of your answer.

**(b)** density = .....

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

## Total Marks for Question Set 2: 50