Oxford Cambridge and RSA

GCSE Mathematics - Paper 3 (Foundation tier)

J560/03 Paper 3 Mathematics (Foundation Tier)

Question Set 3

1

(a) Here are some types of number.

An even number	An odd number	A prime number	A square number	A cube number

From the list, write down the type of number being described.

(i) A number that does **not** divide exactly by 2. ..... **[1]**

(ii) A number that has no factors except itself and 1. ..... **[1]**

(b) **(i)** Write down all the multiples of 4 between 21 and 29.

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

(ii) Write down a common multiple of 4 and 6.

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

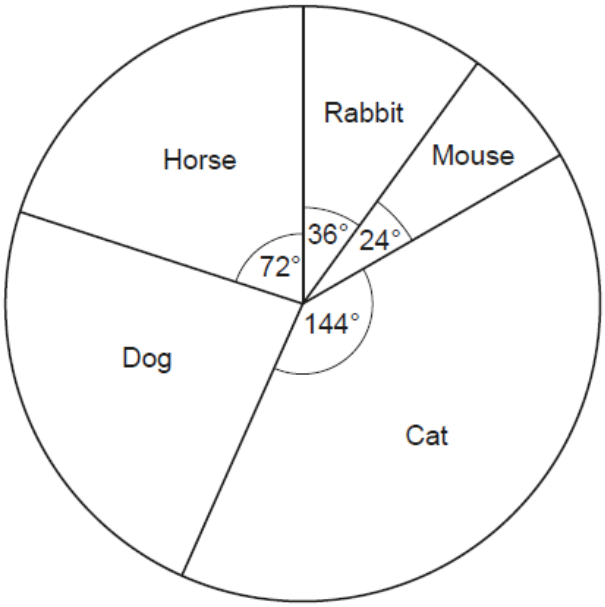
(c) Insert brackets to make this calculation correct.

$$4 - 1 \times 2 = 6$$ **[1]**

(d) Write 7% as a fraction.

(d) ..... **[1]**

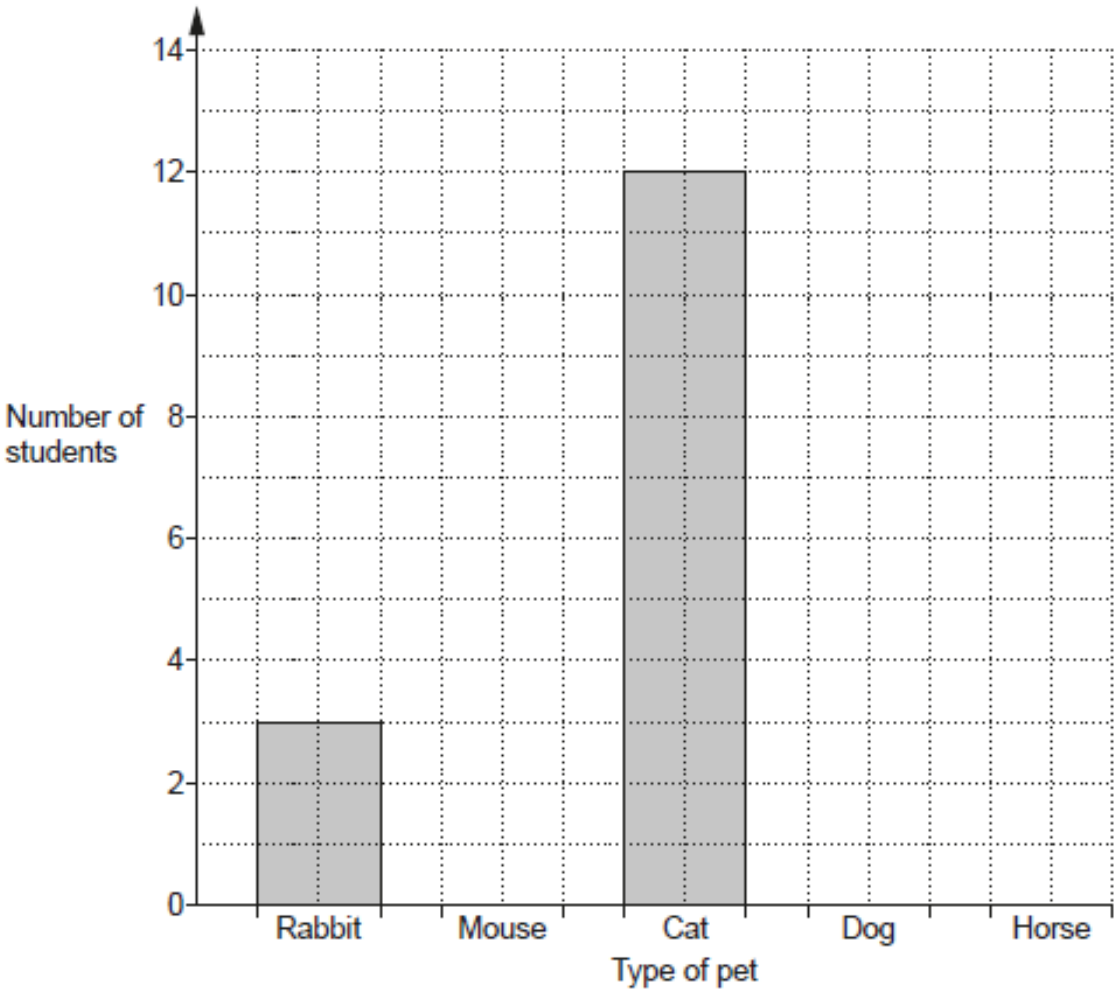
2 30 students each own one pet.
The pie chart shows the proportion of each type of pet owned by the 30 students.



(a) Which type of pet is the mode?

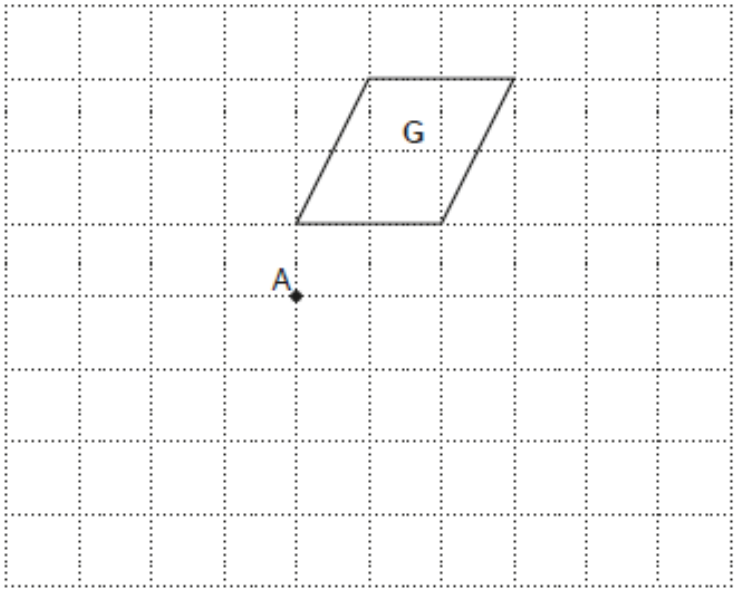
(a) ..... **[1]**

Use the information in the pie chart to complete this bar chart.



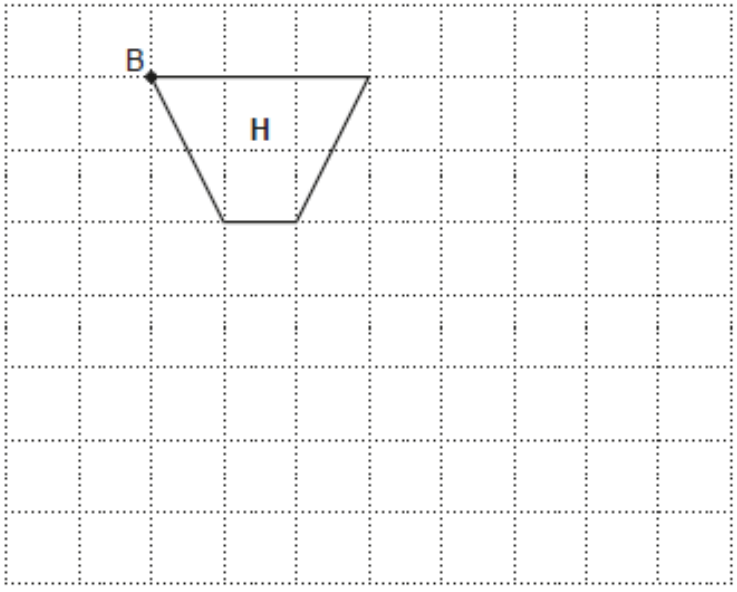
[3]

3 **(a)** Shape **G** is drawn on the grid.



Rotate shape **G** by 180° about the point A. **[2]**

(b) Shape **H** is drawn on the grid.



Enlarge shape **H** with scale factor 2 and the centre of enlargement at point B. **[2]**

4 Tom buys a radio for £40.
Later he sells it and makes a profit of 20%.

Tom says

> The ratio of the price I paid for the radio to the price I sold the radio is 5 : 6.

Show that Tom is correct. **[3]**

5 Multiply out.

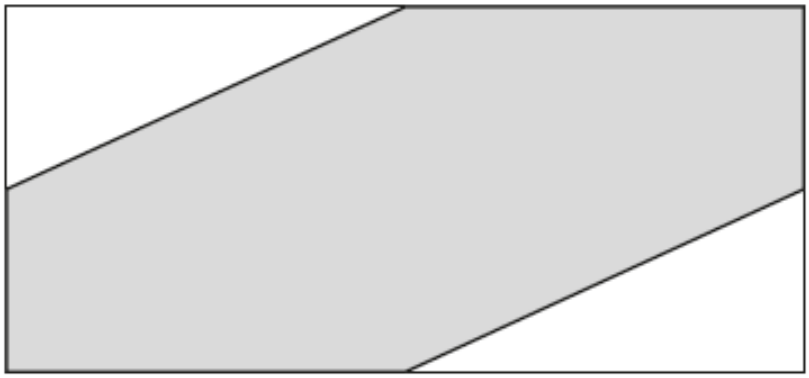
(a) $3(x-2)$

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

(b) $2a(a+b)$

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

6 The midpoints of the sides of a rectangle are joined by straight lines as shown.



Work out the percentage of the rectangle that is shaded.

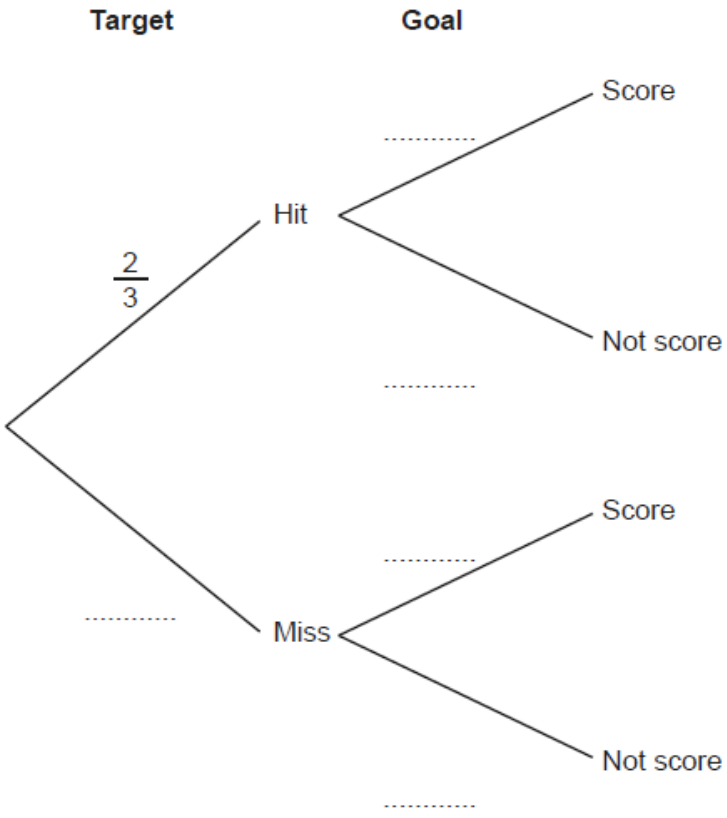
..... % **[4]**

7 Ryan shoots an arrow at a target. He then kicks a ball at a goal.

The probability that Ryan hits the target is $\frac{2}{3}$.

The probability that Ryan scores a goal is $\frac{3}{5}$.

(a) Complete the tree diagram.



[2]

(b) Find the probability that Ryan

(i) misses the target and does not score a goal,

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

(ii) either hits the target or scores a goal or both.

(ii) ..... **[2]**

8 Solve the simultaneous equations.

$$2x - y = 7$$
$$2x + y = 5$$

$x =$ .....

$y =$ ..... **[3]**

9 Two model cars, **A** and **B**, are in a race.
They start together on the starting line.
Assume each car travels at a constant speed.

Car **A** takes 30 seconds to complete each lap of the track.
Car **B** takes a whole number of seconds to complete each lap of the track.
The two cars next cross the starting line together 150 seconds after the start of the race.

Find the **four** possible times that car **B** could take to complete one lap.

You may find this information helpful.

$$150 = 2 \times 3 \times 5 \times 5$$
$$30 = 2 \times 3 \times 5$$

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

10 **(a)** Write down the multiplier for an increase of 140%.
Give your answer as a decimal.

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

(b) Ali invests £1500 in October.
The investment increases in value by 10% in November.
It then decreases in value by 20% in December.

Ali says

10% – 20% = -10%, so the £1500 has lost exactly 10% of its value.

(i) Explain what Ali has done wrong.

.....

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

(ii) Work out the correct percentage loss.

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

11 The diagram shows two rectangles, A and B.

Rectangle A has a width of 25 cm and a height of 12 cm.
The width of rectangle B is three times the height of rectangle B.

The area of rectangle A is equal to the area of rectangle B.

Find the perimeter of rectangle B.

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

Total Marks for Question Set 3: 50