

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.

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

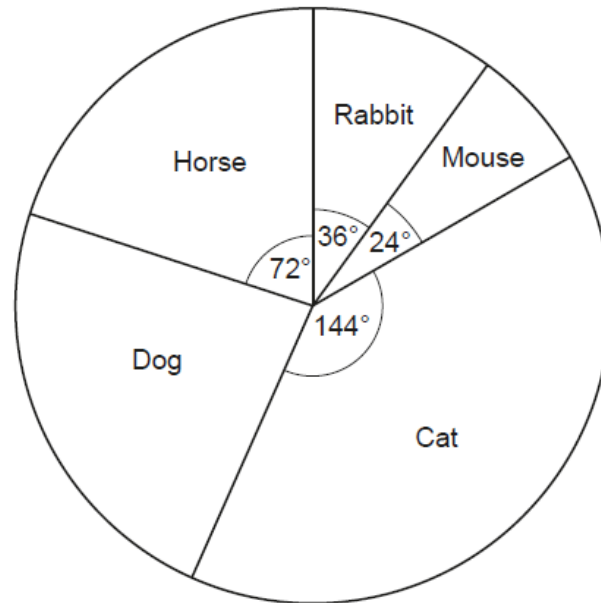
(d) Write 7% as a fraction.

(d) [1]

2

30 students each own one pet.

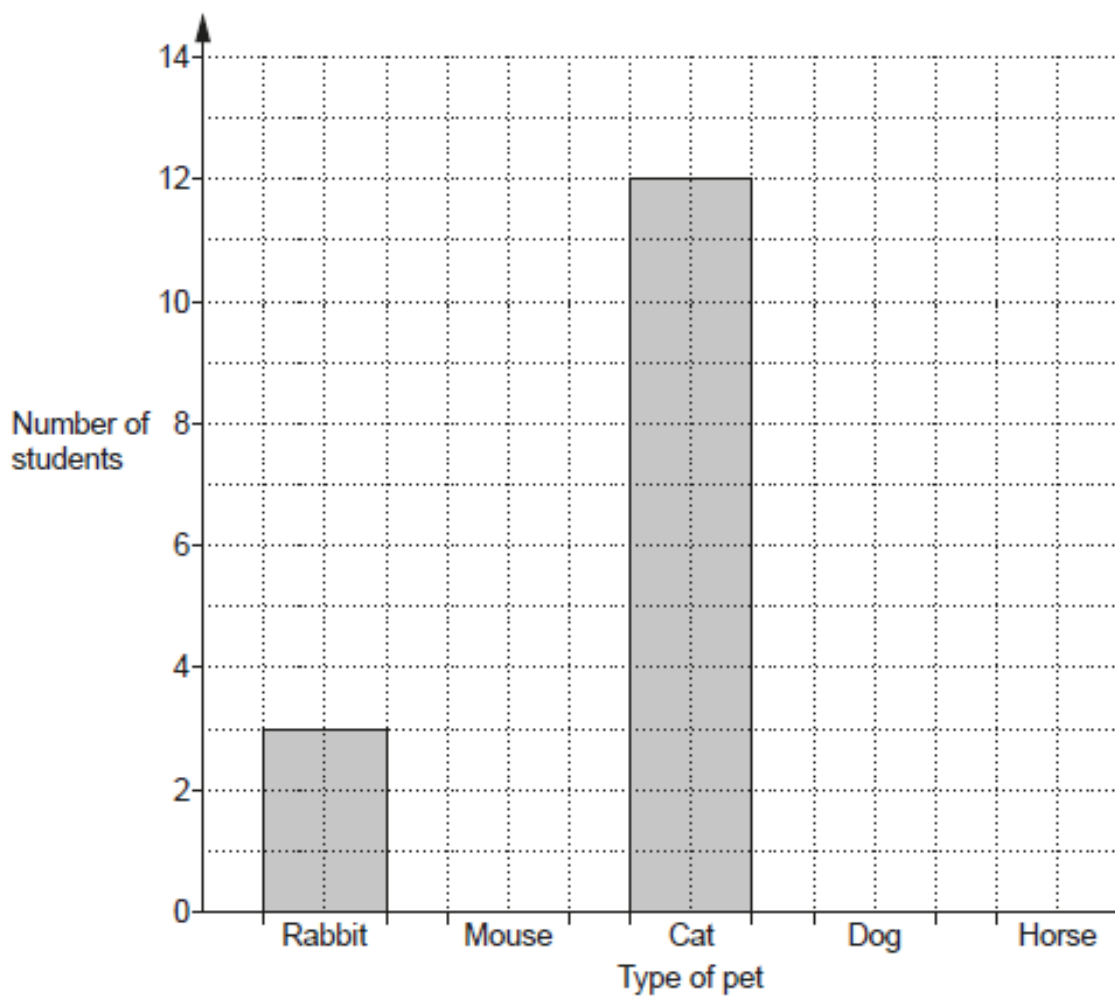
The pie chart shows the proportion of each type of pet owned by the 30 students.



(a) Which type of pet is the mode?

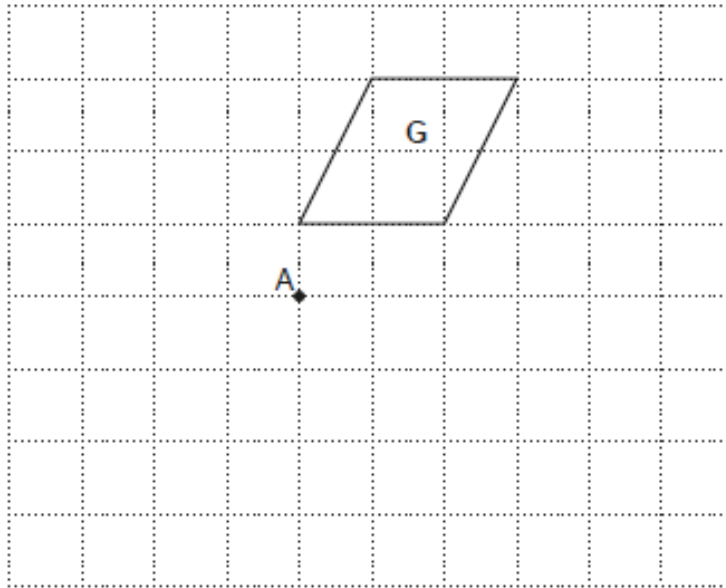
(a) [1]

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



[3]

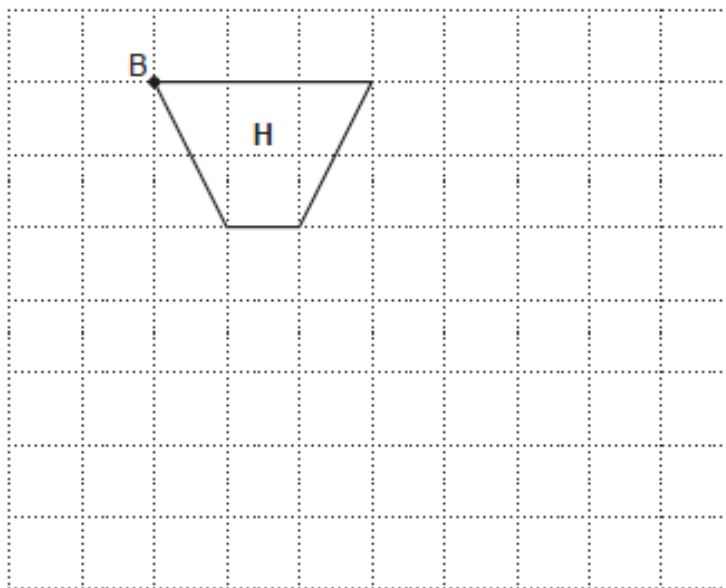
- 3 (a) Shape **G** is drawn on the grid.



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.

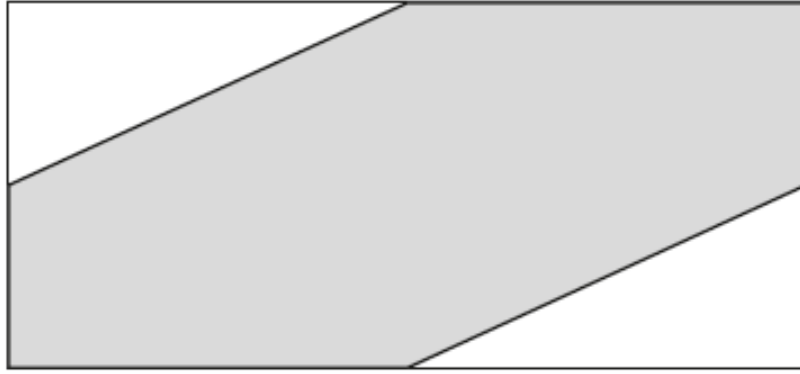
(a) $3(x - 2)$

(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.

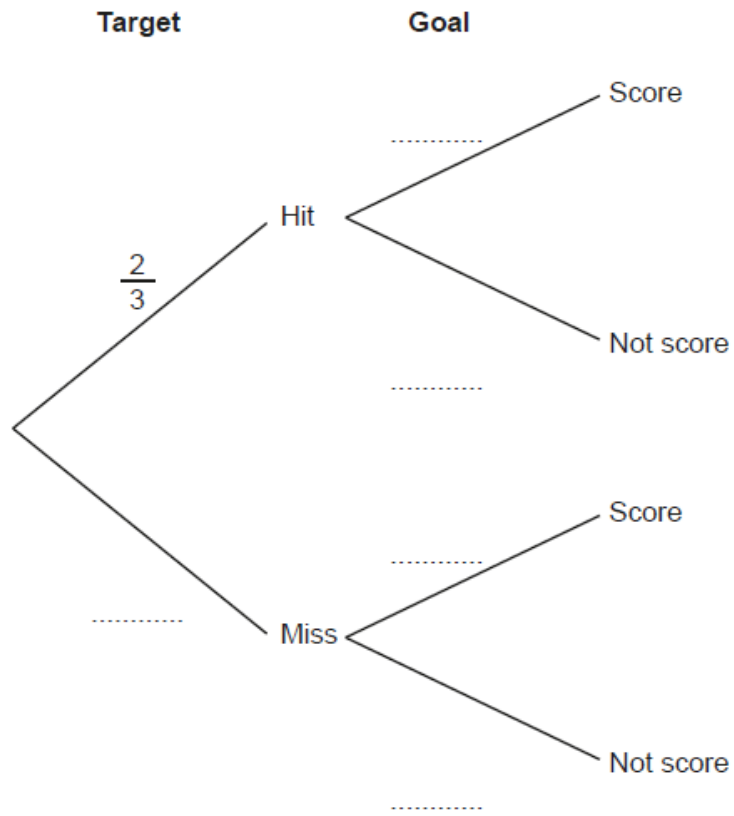
..... % **[4]**

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.

$$\begin{aligned}2x - y &= 7 \\ 2x + y &= 5\end{aligned}$$

$$x = \dots\dots\dots$$

$$y = \dots\dots\dots [3]$$

- 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

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