

Graphs

ANSWERS

Ruler | 30 minutes | Total marks: 25

Name Class

1 $y = 4x - 1$

(a) Write down the gradient of the line.

Answer 4 (1) [1 mark]

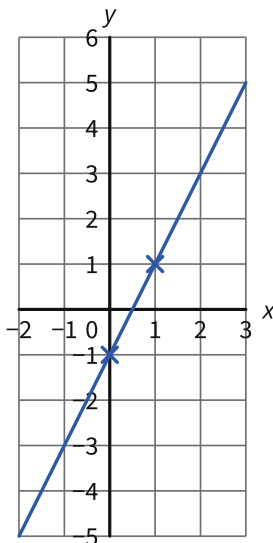
(b) Write down the coordinates of the point where the line crosses the y-axis.

Answer (0, -1) (1) [1 mark]

(c) Write down the equation of a different line that is parallel to $y = 4x - 1$

Answer $y = 4x + \text{any other number}$ (1) [1 mark]

2



Use the gradient and the y-intercept to draw the graph of $y = 2x - 1$

Crosses the y-axis at -1 (1) Goes up 2 for every 1 across (1) Straight line drawn across the grid (1) [3 marks]

3

A straight line has the equation $x + 2y = 6$

(a) Work out the coordinates of the point where the line crosses the x-axis.

Answer (6, 0) (1) [1 mark]

(b) Work out the coordinates of the point where the line crosses the y-axis.

Answer (0, 3) (1) [1 mark]

4

- (a) A straight line has gradient 2 and passes through the point (1, 3)

Work out the equation of the line.

$$3 = 2 \times 1 + c, \text{ so } c = 1 \text{ (1)}$$

Answer $y = 2x + 1$ (1)

[2 marks]

- (b) A straight line passes through the points (0, 2) and (2, 8)

Work out the equation of the line.

$$\text{gradient} = \frac{8 - 2}{2 - 0} = 3 \text{ (1)}$$

crosses the y-axis at 2 (1)

Answer $y = 3x + 2$ (1)

[3 marks]

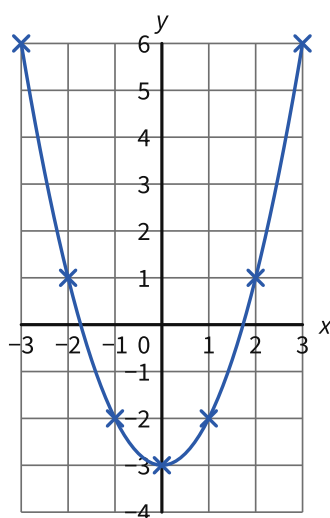
5

- (a) Complete the table of values for $y = x^2 - 3$

x	-3	-2	-1	0	1	2	3
y	6	1	-2	-3	-2	1	6 (1)(1)

[2 marks]

- (b) Use your table to draw the graph.



On the grid, draw the graph of $y = x^2 - 3$

Points plotted (1) Smooth curve through them (1)

[2 marks]

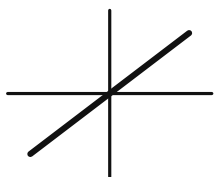
- (c) Use your graph to estimate the values of x when $y = 0$

$x = 1.7 \text{ and } -1.7$ (1)(1) accept ± 0.1

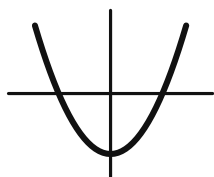
[2 marks]

6

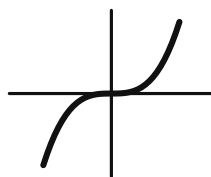
Here are four sketch graphs.



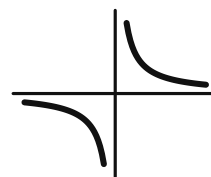
A



B



C



D

Write down the letter of the graph that could be

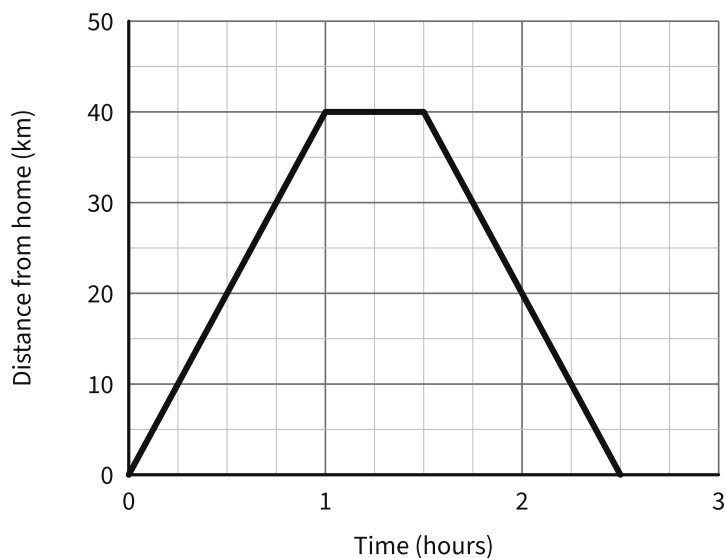
$$y = x^2 - 4 \quad \underline{B(1)} \quad [1 \text{ mark}]$$

$$y = x^3 \quad \underline{C(1)} \quad [1 \text{ mark}]$$

$$y = \frac{1}{x} \quad \underline{D(1)} \quad [1 \text{ mark}]$$

7

The graph shows Jo's cycle ride from home and back.



(a) Work out Jo's speed in the first hour.

Answer 40 (1) km/h [1 mark]

(b) Work out Jo's average speed for the whole journey.

80 km in 2.5 hours (1)

Answer 32 (1) km/h [2 marks]

Question	Topic	RAG
1	I know the gradient and intercept of $y = mx + c$	
2	I can draw a line using its gradient and intercept	
3	I can find where a line of the form $ax + by = c$ crosses the axes	
4	I can find the equation of a straight line	
5	I can draw and use a quadratic graph	
6	I can recognise quadratic, cubic and reciprocal graphs	
7	I can find speeds from a journey graph	