GCSE Maths: Finding the equation of a straight line (Foundation): worksheet

GCSE Maths - Straight-Line Graphs and Coordinates - Foundation - Lesson 12.6

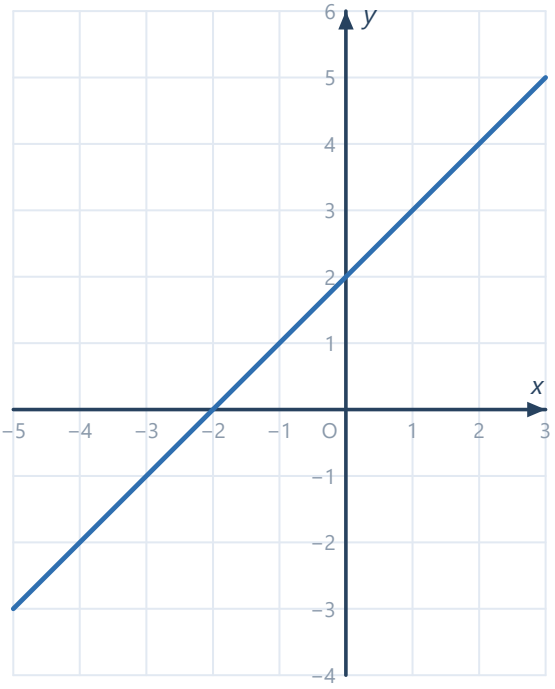
Name: _____ Date: _____ Score: _____

20 questions. Write your answers in the spaces. Answers and step-by-step help are free at **websink.site/gcse/maths/ch12-straight-line-graphs-coordinates/foundation/finding-the-equation-of-a-straight-line/**

Exercise 12G Equations of lines from graphs

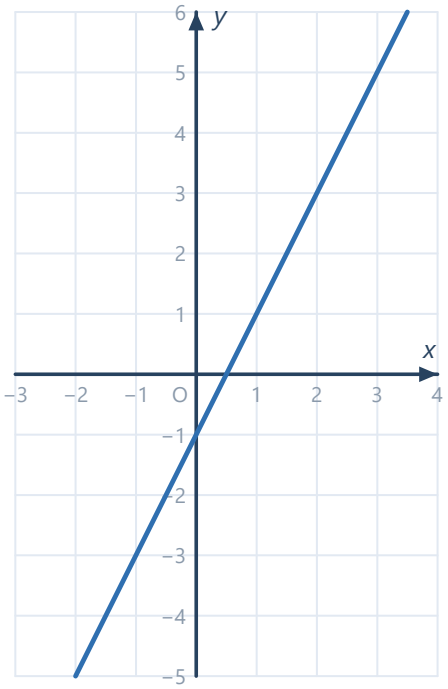
Non-calculator

1 Find the equation of the line.



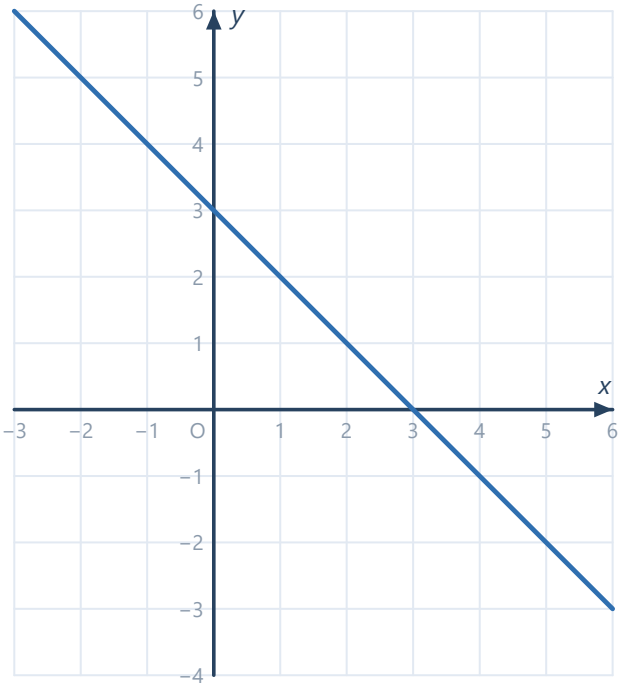
Answer:

2 Find the equation of the line.



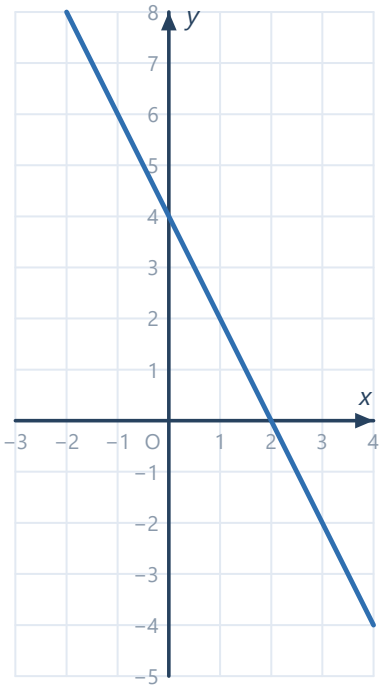
Answer:

3 **Find the equation of the line.**



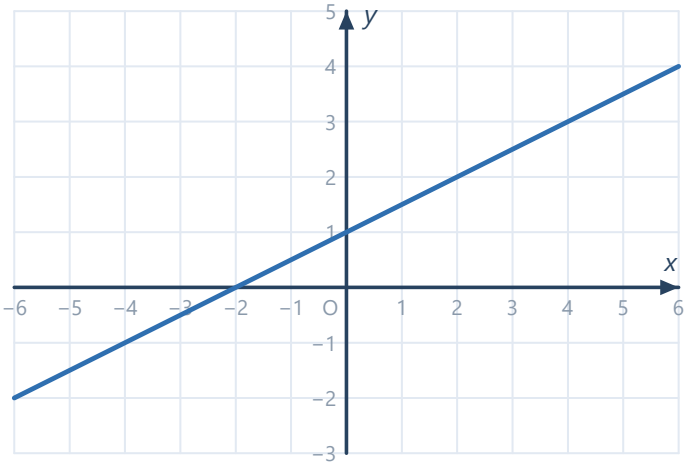
Answer:

4 **Find the equation of the line.**



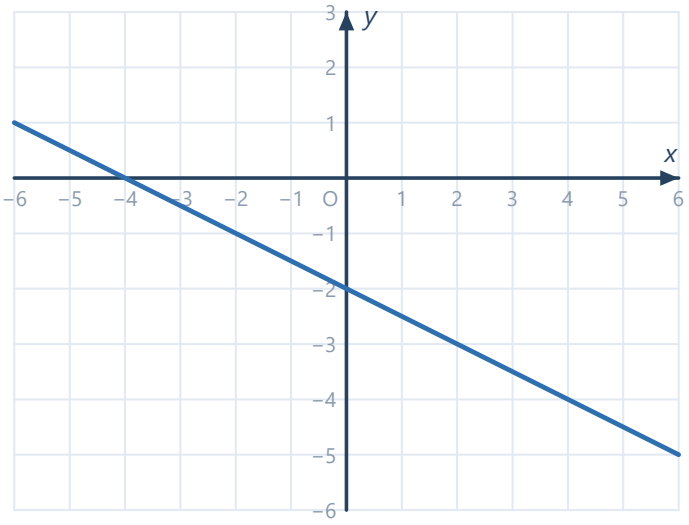
Answer:

5 **Find the equation of the line.**



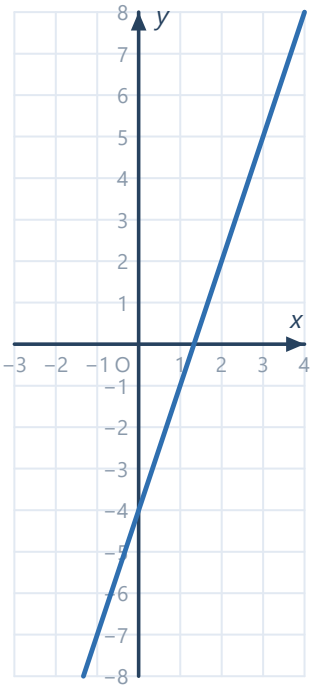
Answer:

6 **Find the equation of the line.**



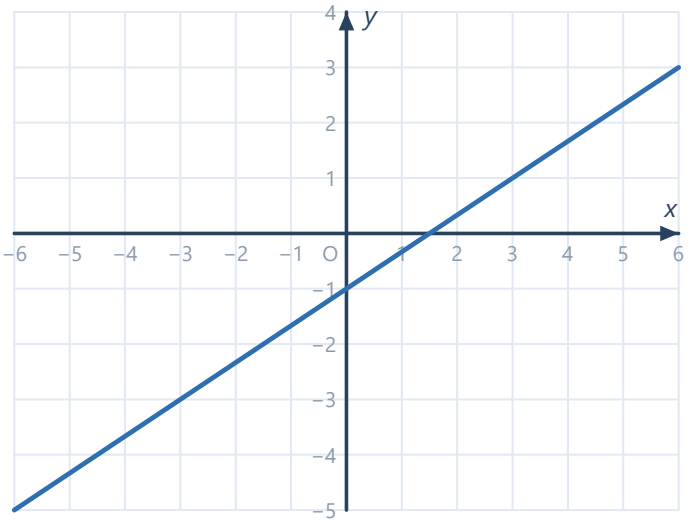
Answer:

7 **Find the equation of the line.**



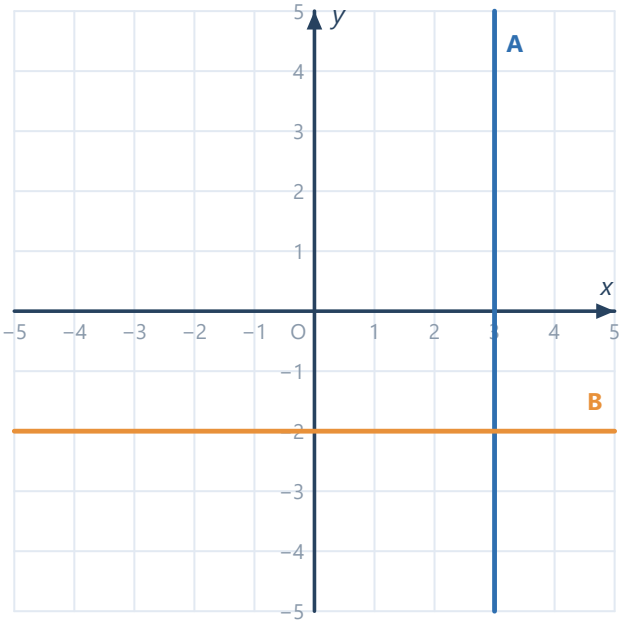
Answer:

8 **Find the equation of the line.**



Answer:

9 Write down the equations of the two lines A and B.



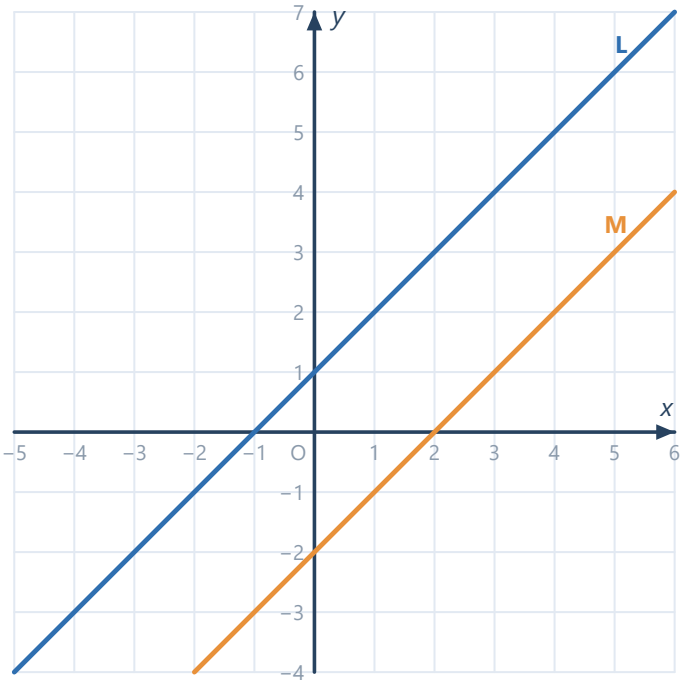
(a) line A

Answer:

(b) line B

Answer:

10 The grid shows two lines, L and M.



(a) Find the equation of line L.

Answer:

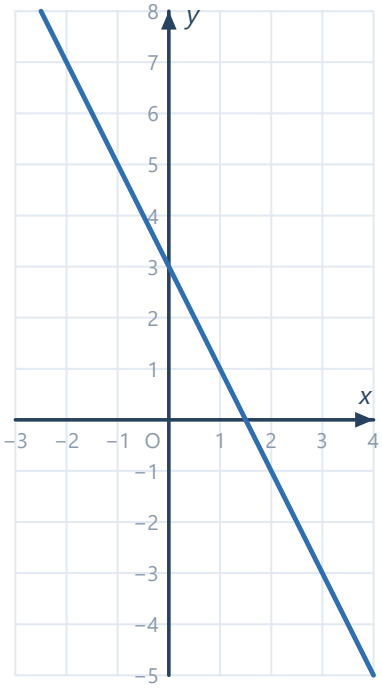
(b) Find the equation of line M.

Answer:

(c) What do you notice about the two equations? What does this tell you about the lines?

Answer:

11 **The line in the diagram is the boundary of a fence on a map. Write down its equation in the form $y = mx + c$.**



Answer:

12 A line passes through (0, 3) and (4, −1). Without calculating, explain how you can tell the gradient is negative.

Answer:

Exercise 12H Equations of lines from points and gradients Non-calculator

1 Find the equation of the line with the given gradient that passes through the given point.

(a) gradient 2, point (1, 5)

Answer:

(b) gradient −1, point (3, 4)

Answer:

(c) gradient 3, point (−2, −1)

Answer:

(d) gradient $\frac{1}{2}$, point (4, 3)

Answer:

2 Find the equation of the line through each pair of points.

(a) (0, 1) and (2, 5)

Answer:

(b) (1, 2) and (3, 8)

Answer:

(c) (0, 5) and (5, 0)

Answer:

(d) (−1, −3) and (3, 5)

Answer:

3 A line goes through (0, 2) and (3, 8). The first point is on the y-axis, so $c = 2$. Find the gradient and the equation of the line.

Answer:

4 Find the equation of the line through each pair of points. The gradient may be a fraction.

(a) (2, 1) and (6, 3)

Answer:

(b) (−3, −2) and (3, 2)

Answer:

(c) (0, −3) and (6, 1)

Answer:

(d) (−2, 4) and (4, −5)

Answer:

5 Find the equation of the line through each pair of points.

(a) (0, 3) and (2, 7)

Answer:

(b) (1, 0) and (3, 4)

Answer:

6 **A line passes through (1, 1) and (3, 5). Does it pass through the point (5, 9)? Show your working.**

Answer:

7 **A line passes through (−1, −7) and (3, 5). Find its equation and then the value of y when $x = 10$.**

Answer:

8 **Pete finds the equation of the line through (1, 3) and (3, 7). He gets $m = 2$ and writes $y = 2x + 3$. Show that he is wrong and find the correct equation.**

Answer:

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