

GCSE Maths: The equation $y = mx + c$ (Foundation): worksheet

GCSE Maths - Straight-Line Graphs and Coordinates - Foundation - Lesson 12.5

Name: _____

Date: _____

Score: _____

15 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/the-equation-y-mx-c/

Exercise 12F Gradient, intercept and sketching lines

Non-calculator

1 Write down the gradient and the y -intercept of each line.

(a) $y = 2x + 3$

Answer: _____

(b) $y = 5x - 1$

Answer: _____

(c) $y = -x + 4$

Answer: _____

(d) $y = \frac{1}{2}x - 2$

Answer: _____

(e) $y = 3x$

Answer: _____

(f) $y = -4x + 6$

Answer: _____

2 Write down the equation of the line with the given gradient and y -intercept.

(a) gradient 4, y -intercept -3

Answer: _____

(b) gradient -2 , y -intercept 5

Answer: _____

(c) gradient 1, y -intercept 0

Answer: _____

(d) gradient $\frac{1}{3}$, y -intercept 2

Answer: _____

3 Write down the gradient and the y -intercept of each line. Rewrite the equation in the form $y = mx + c$ first.

(a) $y = 5 - 3x$

Answer: _____

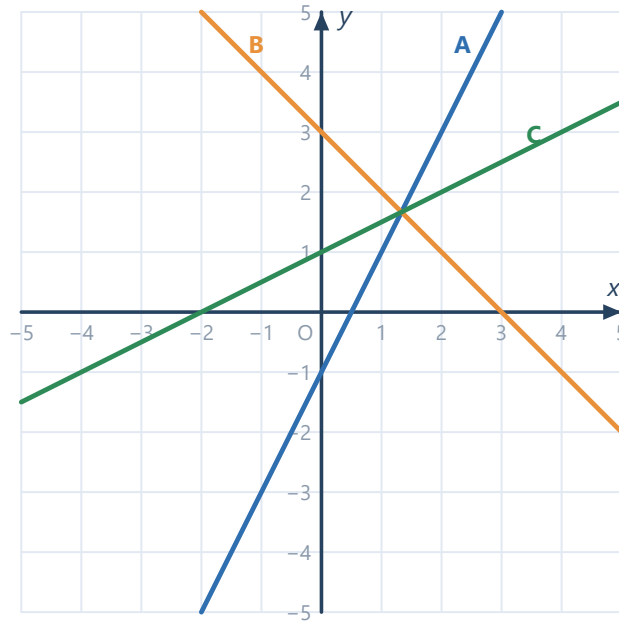
(b) $y = -1 + 2x$

Answer: _____

(c) $y = 7 - x$

Answer:

- 4 The graph shows three lines A, B and C. Match each equation to its line.



(a) $y = -x + 3$

Answer:

(b) $y = \frac{1}{2}x + 1$

Answer:

(c) $y = 2x - 1$

Answer:

- 5 Sketch the graph of $y = 2x + 1$. Use the gradient and the y -intercept.

Answer:

- 6 Sketch the graph of $y = -x + 3$. Use the gradient and the y -intercept.

Answer:

- 7 Sketch the graph of $y = \frac{1}{2}x - 2$. Use the gradient and the y -intercept.

Answer:

- 8 Rearrange each equation into the form $y = mx + c$.

(a) $y - 2x = 3$

Answer:

(b) $2x + y = 7$

Answer:

(c) $2y = 8x - 6$

Answer:

(d) $3y = 6x + 9$

Answer:

9 Each line has equation $y = mx + c$. Find the value of c .

(a) gradient 3, passes through (2, 5)

Answer:

(b) gradient -2 , passes through (1, 4)

Answer:

(c) gradient $\frac{1}{2}$, passes through (4, 3)

Answer:

10 Find the coordinates of the point where each line crosses (i) the y -axis and (ii) the x -axis.

(a) $y = 2x - 6$

Answer:

(b) $y = -x + 4$

Answer:

(c) $y = \frac{1}{2}x + 3$

Answer:

(d) $y = 3x + 12$

Answer:

11 A line has gradient 3 and passes through the point (0, -4). Does the line pass through (2, 2)? Show your working.

Answer:

12 Explain why the lines $y = 2x + 3$ and $y = 2x - 1$ never meet.

Answer:

13 Jo says the line $y = 3 - 2x$ has gradient 3 and y -intercept -2 . Is she correct? Give the correct values.

Answer:

14 Sketch the line $2x + y = 6$ by finding where it crosses the axes.

Answer:

15 The line $y = -2x + 6$ and the two axes make a triangle. Work out its area.

Answer: