

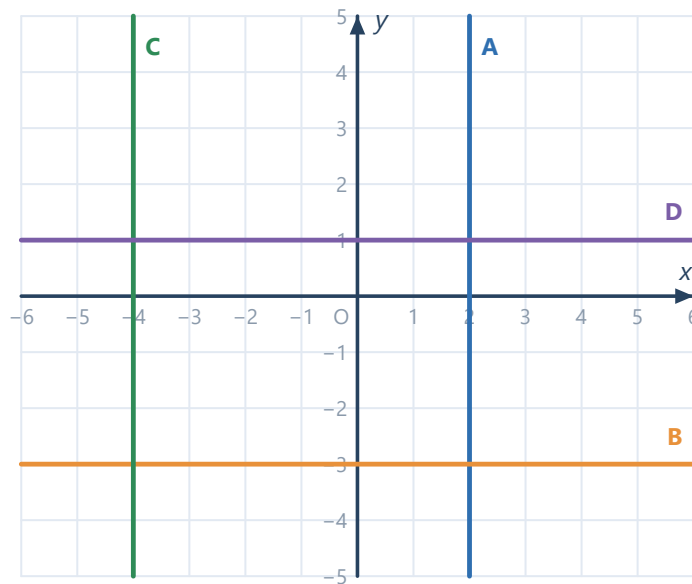
GCSE Maths: Horizontal and vertical lines, and drawing graphs from tables (Higher): answers

GCSE Maths - Straight-Line Graphs and Coordinates - Higher - Lesson 12.3

Answers. Final answers to the worksheet questions. Full step-by-step solutions for every question are free at websink.site/gcse/maths/ch12-straight-line-graphs-coordinates/higher/horizontal-and-vertical-lines-and-drawing-graphs-from-tables/

Exercise 12D Horizontal and vertical lines, tables of values and drawing lines Non-calculator

- 1 Write down the equation of each of the lines A, B, C and D.



- (a) line A

Answer: $x = 2$

- (b) line B

Answer: $y = -3$

- (c) line C

Answer: $x = -4$

- (d) line D

Answer: $y = 1$

- 2 Write down the equation of each line.

- (a) The line is vertical and passes through $(-2, 4)$.

Answer: $x = -2$

- (b) The line is horizontal and passes through $(3, 5)$.

Answer: $y = 5$

(c) The line is the x-axis.

Answer: $y = 0$

(d) The line is the y-axis.

Answer: $x = 0$

3 Complete the table of values for each equation.

(a) $y = x + 1$ for $x = 0, 1, 2, 3, 4$

Answer: 1, 2, 3, 4, 5

(b) $y = 2x$ for $x = -2, -1, 0, 1, 2$

Answer: -4, -2, 0, 2, 4

(c) $y = 3x - 1$ for $x = -1, 0, 1, 2, 3$

Answer: -4, -1, 2, 5, 8

(d) $y = -2x + 10$ for $x = 0, 1, 2, 3, 4$

Answer: 10, 8, 6, 4, 2

4 (a) Complete a table of values for $y = 2x + 1$ for $x = -2, -1, 0, 1, 2, 3$. (b) Draw the graph of $y = 2x + 1$.

Answer: A straight line through $(-2, -3)$, $(0, 1)$ and $(3, 7)$

5 Draw the graph of $y = x - 2$ for values of x from -3 to 4 .

Answer: A straight line through $(0, -2)$ and $(2, 0)$

6 Draw the graph of $y = 3 - x$ for values of x from -2 to 4 .

Answer: A straight line through $(0, 3)$ and $(3, 0)$

7 Draw the graph of $y = 3x - 2$ for values of x from -1 to 3 .

Answer: A straight line through $(0, -2)$ and $(1, 1)$

8 Draw the graph of $y = \frac{1}{2}x + 2$ for values of x from -4 to 4 . (Use even values of x .)

Answer: A straight line through $(-4, 0)$, $(0, 2)$ and $(4, 4)$

9 Is each point on the line $y = 2x - 3$? Write yes or no and show your working.

(a) $(4, 5)$

Answer: Yes

(b) $(-1, -5)$

Answer: Yes

(c) $(0, 3)$

Answer: No

(d) $(3, 2)$

Answer: No

10 A line has equation $y = 3x + 2$. (a) Find the value of y when $x = 4$. (b) Find the value of x when $y = 11$.

Answer: (a) $y = 14$ (b) $x = 3$

- 11** The points $(0, -1)$, $(1, 1)$ and $(2, 3)$ are on a straight line. Which equation is the equation of the line? A: $y = x - 1$ B: $y = 2x - 1$ C: $y = 2x + 1$

Answer: B: $y = 2x - 1$

- 12** Sam says the line $y = 3$ is a vertical line. Is he right? Give a reason.

Answer: No. $y = 3$ is horizontal.

- 13** The lines $x = -2$, $x = 3$, $y = -1$ and $y = 3$ form a rectangle. Work out its perimeter and its area.

Answer: Perimeter 18, area 20

- 14** Here is a table of values for a straight line.

x	0	1	2	3
y	1	4	7	11

One of the y values is wrong. Which one, and what should it be? Write the equation of the line.

Answer: The last value should be 10; $y = 3x + 1$

- 15** The lines $y = x$, $x = 4$ and the x -axis form a triangle. Work out the area of the triangle.

Answer: 8