

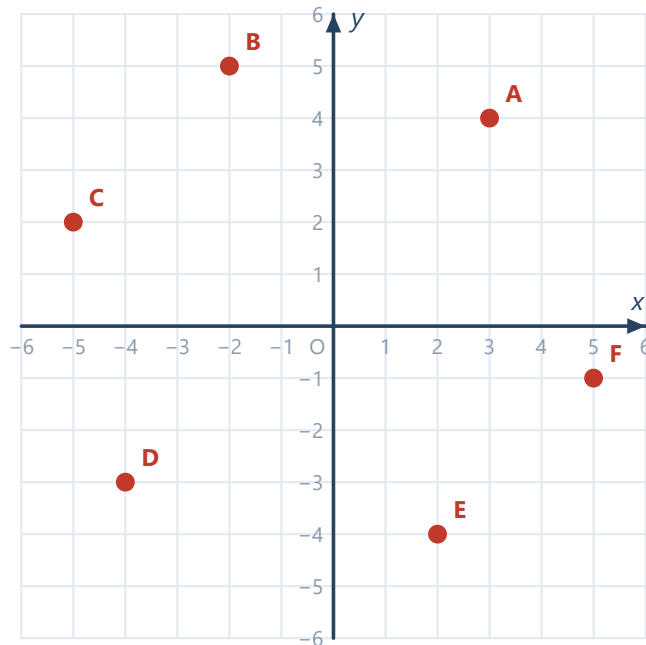
GCSE Maths: Coordinates in four quadrants (Foundation): answers

GCSE Maths - Straight-Line Graphs and Coordinates - Foundation - Lesson 12.1

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/foundation/coordinates-in-four-quadrants/

Exercise 12A Coordinates and shapes on a grid Non-calculator

1 Write down the coordinates of each of the points A to F.



(a) point A

Answer: (3, 4)

(b) point B

Answer: (-2, 5)

(c) point C

Answer: (-5, 2)

(d) point D

Answer: (-4, -3)

(e) point E

Answer: (2, -4)

(f) point F

Answer: (5, -1)

2 Fill in the gaps.

(a) The point $(0, 0)$ is called the _____.

Answer: origin

(b) The horizontal axis is the _____-axis.

Answer: x

(c) In the point $(-3, 5)$, the y -coordinate is _____.

Answer: 5

(d) The point $(4, 0)$ is on the _____-axis.

Answer: x

3 State which quadrant each point is in, or say which axis it is on.

(a) $(3, 5)$

Answer: Quadrant 1

(b) $(-2, 4)$

Answer: Quadrant 2

(c) $(-5, -1)$

Answer: Quadrant 3

(d) $(6, -3)$

Answer: Quadrant 4

(e) $(0, -4)$

Answer: on the y -axis

(f) $(-7, 0)$

Answer: on the x -axis

4 Plot the points $A(-3, -1)$, $B(3, -1)$, $C(3, 2)$ and $D(-3, 2)$ on a grid. Join them in order. What shape have you drawn?

Answer: A rectangle (6 by 3)

5 ABCD is a rectangle. Find the coordinates of D in each case.

(a) $A(-4, -2)$, $B(3, -2)$, $C(3, 1)$

Answer: $(-4, 1)$

(b) $A(-3, 1)$, $B(-3, -3)$, $C(2, -3)$

Answer: $(2, 1)$

(c) $A(-5, 4)$, $B(1, 4)$, $C(1, -1)$

Answer: $(-5, -1)$

6 ABCD is a parallelogram. Find the coordinates of D in each case.

(a) $A(-2, -1)$, $B(1, -3)$, $C(5, -3)$

Answer: $(2, -1)$

- (b) $A(0, 2)$, $B(-3, -1)$, $C(1, -1)$

Answer: $(4, 2)$

- (c) $A(-4, 3)$, $B(-2, -2)$, $C(3, -2)$

Answer: $(1, 3)$

7 Write the coordinates of each point.

- (a) P is 4 units to the left of the y -axis and 3 units below the x -axis.

Answer: $(-4, -3)$

- (b) Q is 5 units to the right of the y -axis and 2 units above the x -axis.

Answer: $(5, 2)$

- (c) R is on the x -axis, 6 units to the left of the origin.

Answer: $(-6, 0)$

- (d) S is on the y -axis, 5 units below the origin.

Answer: $(0, -5)$

8 Work out the distance between each pair of points. Each pair lies on a horizontal or a vertical line.

- (a) $(-3, 2)$ and $(5, 2)$

Answer: 8

- (b) $(4, -1)$ and $(4, 6)$

Answer: 7

- (c) $(-6, -2)$ and $(-6, -7)$

Answer: 5

- (d) $(-2, 3)$ and $(7, 3)$

Answer: 9

9 A treasure map starts at the point $(-4, 3)$. Follow these moves: 6 right, 5 down, 3 left, 8 up. Write the coordinates of the end point.

Answer: $(-1, 6)$

10 ABCD is a rectangle with vertices $A(-2, -1)$, $B(4, -1)$, $C(4, 3)$ and $D(-2, 3)$. Work out (a) the perimeter and (b) the area of the rectangle.

Answer: (a) 20 (b) 24

11 Work out the area of each right-angled triangle. Its two shorter sides are parallel to the axes.

- (a) $A(-4, 1)$, $B(2, 1)$, $C(2, -3)$

Answer: 12

- (b) $A(1, -2)$, $B(1, 4)$, $C(6, -2)$

Answer: 15

12 Sam plots the point $(-2, 5)$. He says it is in Quadrant 4. Is he correct? Explain.

Answer: No. It is in Quadrant 2.

- 13** A is (1, 3), B is (4, 3) and C is (4, -2). Show that triangle ABC has a right angle, and say which vertex it is at.

Answer: Right angle at B

- 14** ABCD is a square. A is (-2, -2) and C is (2, 2). A and C are opposite corners and the sides are parallel to the axes. Find the coordinates of B and D, and the area of the square.

Answer: B (2, -2), D (-2, 2), area 16

- 15** On a map, the school is at (-3, 2). The park is 5 km east and 4 km south of the school. The library is directly north of the park, level with the school. Find: (a) the coordinates of the park, (b) the coordinates of the library, (c) the distance from the school to the library.

- (a) the park

Answer: (2, -2)

- (b) the library

Answer: (2, 2)

- (c) the distance from the school to the library

Answer: 5 km

- 16** The point P(a , 3) is on the y -axis. The point Q(-2, b) is on the x -axis. Find a and b , and write down the coordinates of P and Q.

Answer: $a = 0$, $b = 0$; P(0, 3), Q(-2, 0)