

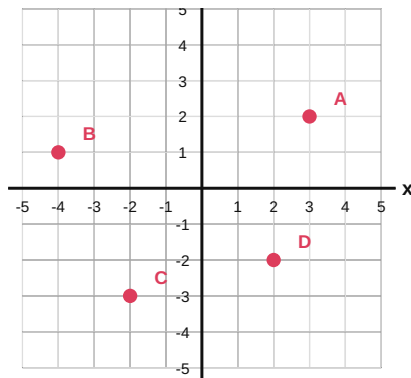
Boost Free Lessons - Year 6 Maths

Lesson 18: The Coordinate Plane

Name: _____ Grade: _____ Date: _____

Worked Example 1

Plot and name the points shown below.



1. Coordinates are always written as (x, y) , with the **x value first**.
2. The x value tells you how far to move left or right from the origin.
3. The y value tells you how far to move up or down.
4. Point A is 3 right and 2 up, so A is $(3, 2)$. Negative values mean left or down.

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

Worked Example 2

Which quadrant contains the point $(-5, 3)$?

1. The axes divide the plane into four **quadrants**, numbered anticlockwise from the top right.
2. The x value is -5 , which is negative, so the point is to the **left**.
3. The y value is 3 , which is positive, so the point is **above** the x-axis.
4. Left and above is the top-left region, which is the second quadrant.

$(-5, 3)$ is in the second quadrant

Remember: Coordinates are written (x, y) , with **x first**. Positive x is right and positive y is up. Quadrants are numbered anticlockwise from the top right.



Question 1: Answer the following.

1. Write the coordinates of a point 2 right and 5 up.

2. Write the coordinates of a point 3 left and 1 up.

3. Write the coordinates of a point 4 left and 2 down.

4. Write the coordinates of a point 1 right and 3 down.

5. Which quadrant contains $(4, 3)$?

6. Which quadrant contains $(-2, -6)$?

7. Which quadrant contains $(5, -1)$?

8. Where is the point $(0, 0)$?



Question 2: Answer the following.

1. A point sits on the x-axis, 4 units left of the origin. Write its coordinates.
2. A point sits on the y-axis, 3 units below the origin. Write its coordinates.
3. What do all points on the x-axis have in common?
4. Plot $(2, 3)$ and $(2, -3)$. What do you notice?
5. Plot $(1, 1)$, $(4, 1)$ and $(4, 5)$. What shape would these form with a fourth point?
6. Explain why $(3, 5)$ and $(5, 3)$ are different points.



Question 3: Answer the following questions.

1. A treasure map marks a chest at $(-3, 4)$. Describe how to walk there from the origin.
2. A rectangle has corners at $(1, 1)$, $(5, 1)$, $(5, 4)$ and $(1, 4)$. Find its area.
3. Using the rectangle above, find its perimeter.
4. A point is moved from $(2, 3)$ four units left. Write its new coordinates.
5. A triangle has vertices $(0, 0)$, $(4, 0)$ and $(0, 3)$. Find its area.





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Answers: The Coordinate Plane**Question 1**

1. (2, 5)
2. (-3, 1)
3. (-4, -2)
4. (1, -3)
5. First
6. Third
7. Fourth
8. At the origin, where the axes cross

Question 2

1. (-4, 0)
2. (0, -3)
3. Their y value is 0.
4. They sit directly above and below each other, on the same vertical line.
5. A rectangle, with the fourth point at (1, 5).
6. The order matters. (3, 5) is 3 right and 5 up, while (5, 3) is 5 right and 3 up.

Question 3

1. Move 3 units left, then 4 units up.
2. 12 square units
3. 14 units
4. (-2, 3)
5. 6 square units

