

Math 9 – Unit 7: Coordinate Geometry

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Lesson #1: The Coordinate Plane

Learning Goal: We are learning how to use the coordinate grid system.

In this chapter and the next, we will learn a lot of new vocabulary. You need to become intimate with these words, so let's first define them, then draw/label them!

Coordinate Plane

- it is a grid made up of two number lines which cross at their zeros

Quadrants

- the four corners of the coordinate plane.

x-axis

the horizontal # line

y-axis

the vertical # line

x-coordinate

- the value/location on the x-axis
- this is just a number

y-coordinate

- the value/location on the y-axis

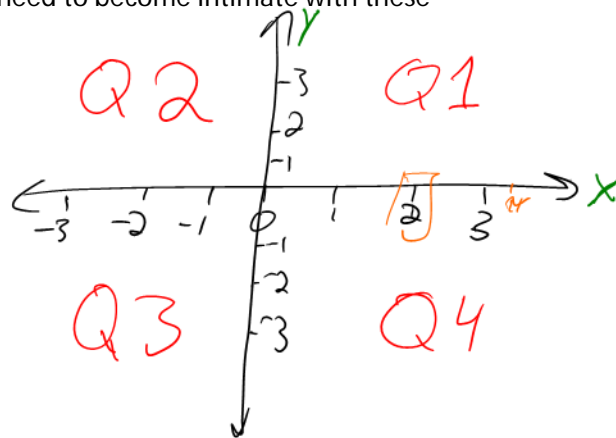
Ordered Pair

- 2 things in order.
- the x and y coordinate are paired together, written

as (x, y) ex: $(2, -3)$
point

Origin

$(0, 0)$



Example 1: Graph the following points on the given grid.

A (3, 4)

B (-1, 4)

C (4, -2)

D (-5, -4)

E (2, 5)

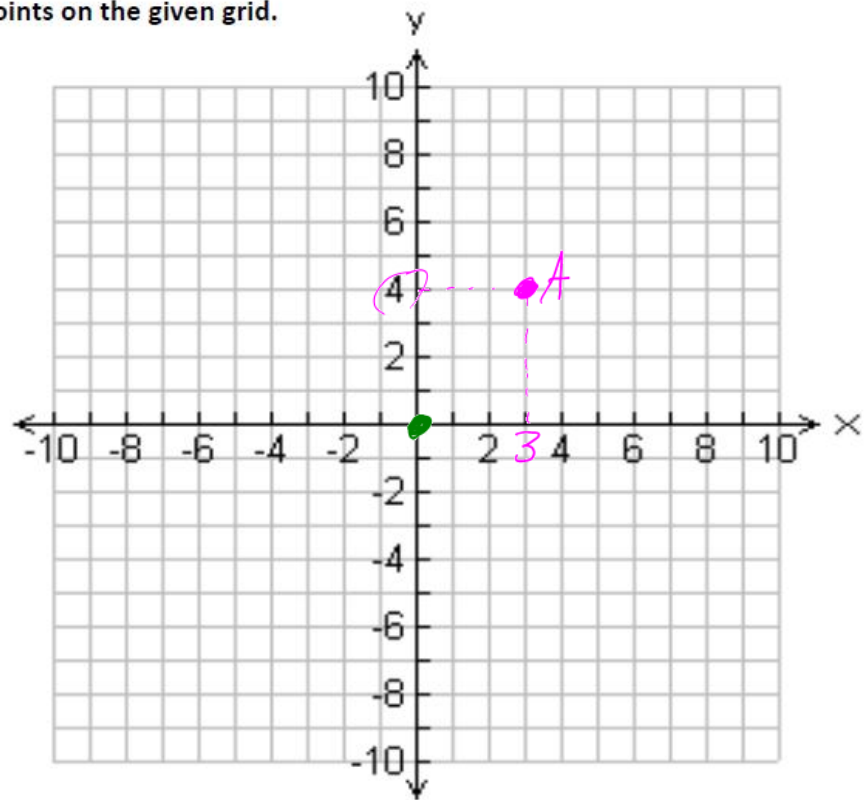
F (-3, -1)

G (-3, 7)

H (6, -2)

I (2, 0)

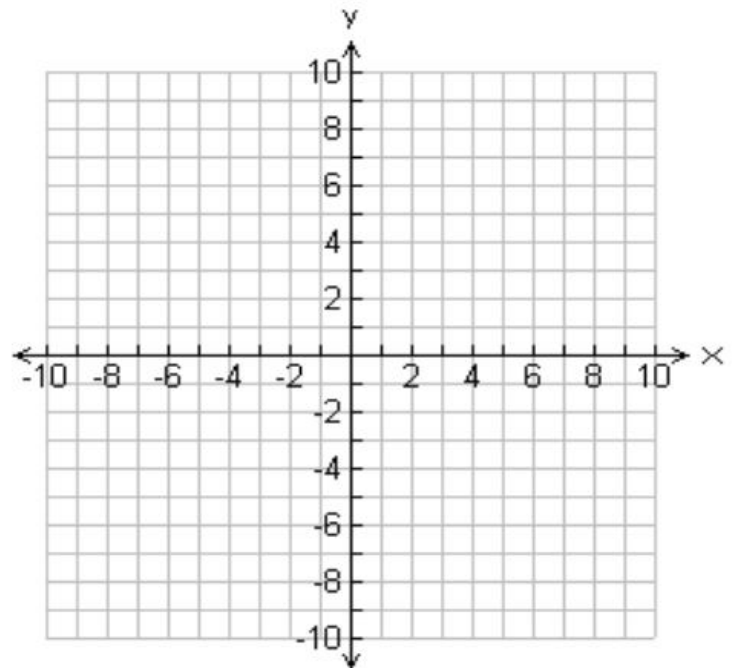
J (0, -4)



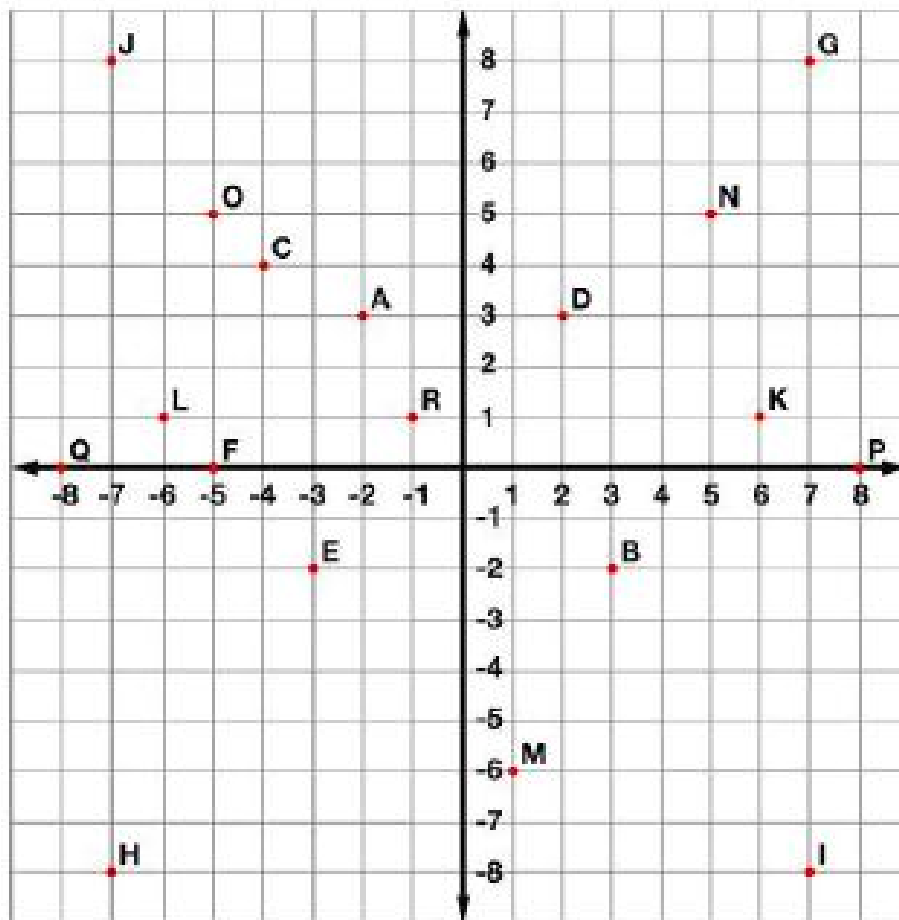
Example 2: Calculate the area of a triangle with vertices at A(-5,-3), B(3,-3), and C(3,8)

Step 1: Plot the points and connect the points to form a triangle

Step 2: Find the length of the base and height



Step 3: Calculate the area



Tell what point is located at each ordered pair.

- | | | |
|---------------------|--------------------|--------------------|
| 1. $(3, -2)$ _____ | 2. $(2, 3)$ _____ | 3. $(-5, 5)$ _____ |
| 4. $(-7, -8)$ _____ | 5. $(-4, 4)$ _____ | 6. $(-5, 0)$ _____ |

Write the ordered pair for each given point.

- | | | |
|--------------------|--------------------|--------------------|
| 7. E _____ | 8. M _____ | 9. P _____ |
| 10. G _____ | 11. Q _____ | 12. N _____ |

Plot the following points on the coordinate grid.

- | | | |
|-------------------------|------------------------|-----------------------|
| 13. S $(-6, -3)$ | 14. T $(2, -4)$ | 15. U $(5, 8)$ |
|-------------------------|------------------------|-----------------------|

Success Criteria:

- I can define the important key terms that are used in the coordinate grid system
- I can tell the difference between the "x" and "y" coordinates in an ordered pair
- I can find an ordered pair on a coordinate grid