

Use Brain pop
Circle to plan

What Is Coordinate Geometry?

Word Box

~~coordinate plane~~

~~ordered pair~~

~~quadrants~~

~~x-axis~~

y-axis

coordinates

abscissa

ordinate

~~origin~~

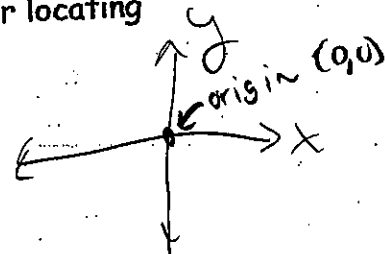
Complete the following sentences.

1) Two perpendicular number lines can be used to form a system for locating points called a Coordinate plane.

2) The horizontal line is called the x-axis.

3) The vertical line is called the y-axis.

4) The point where the axes cross is called the Origin, and this point is represented by the Ordered pair $(0, 0)$.



5) Other points are represented by ordered pairs according to their distance with respect to each axis. The ordered pair $(-2, 3)$ corresponds to -2 on the x-axis and 3 on the y-axis. Each ordered pair is a set of Coordinates for the point it names.

6) The x-coordinate is called the abscissa.
The y-coordinate is called the ordinate.
A point is the graph of its ordered pair.

7) The x-axis and the y-axis divide the graph into four regions called quadrants.

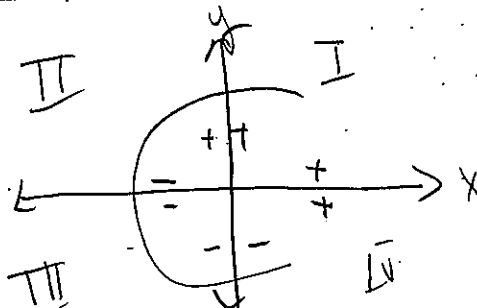
The signs of the coordinates in each quadrant are:

Quadrant I: $(+, +)$

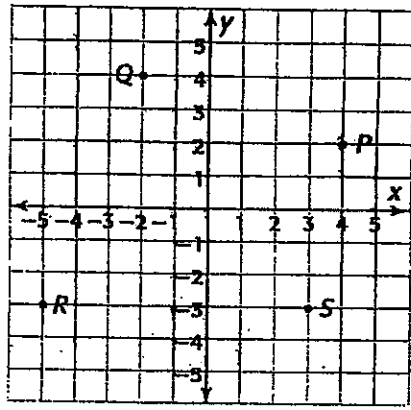
Quadrant II: $(-, +)$

Quadrant III: $(-, -)$

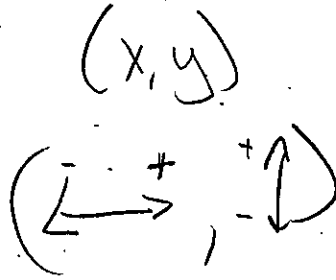
Quadrant IV: $(+, -)$



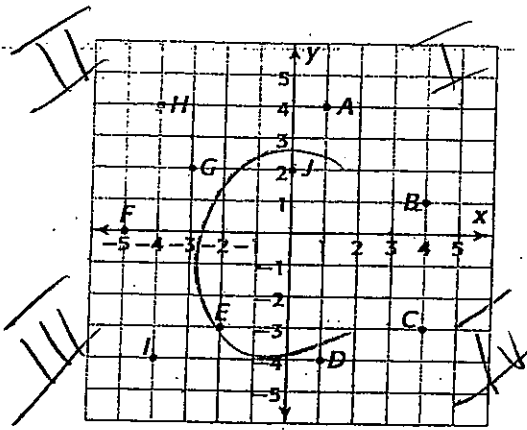
8) Use an ordered pair to name the location of each point.



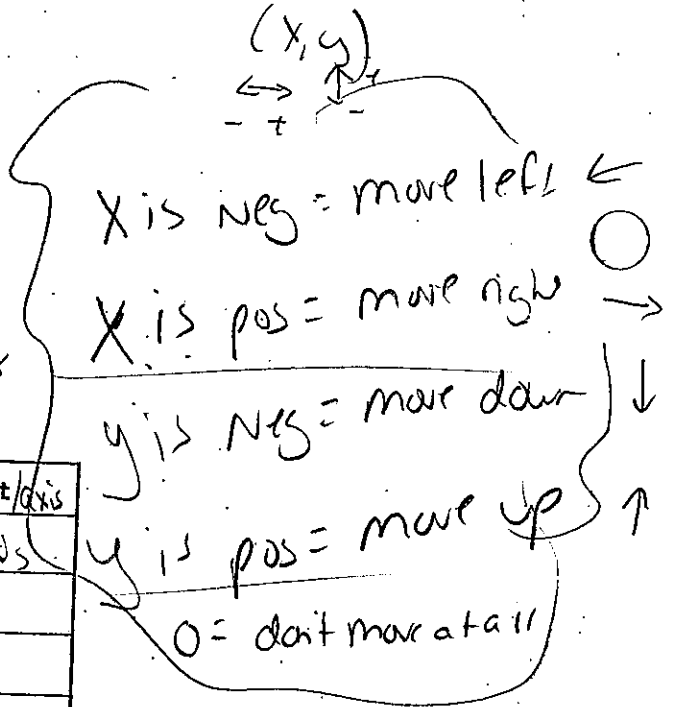
- a. P (4, 2) b. Q (-2, 4) c. R (-4, -3) d. S (3, -3)



9) Name the point that has the given coordinates. Give the quadrant for each point.

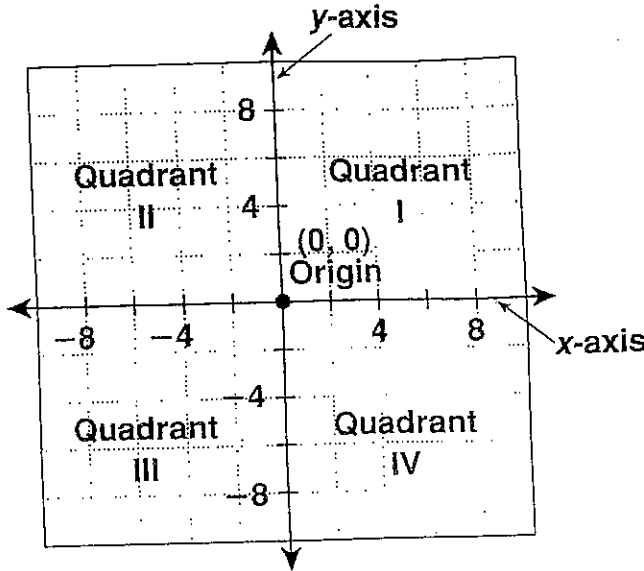


Coordinates	Point	Quadrant / Axis
a. $(-5, 0)$	F	x-axis
b. $(4, -3)$	C	IV
c. $(-4, 4)$	H	II
d. $(0, 2)$	J	y-axis
e. $(-2, -3)$	E	III
f. $(4, 1)$	B	I



LESSON
4-1 **Reading Strategies**
Using Relevant Information

Horizontal number lines and vertical number lines form a grid called the coordinate plane.



1. What is the name of the horizontal number line? x-axis
2. What is the name of the vertical number line? y-axis
3. The number lines meet at point (0, 0). What is that point called? Origin
4. What are the four parts that divide the coordinate plane called? Quadrants

To locate a point on the coordinate plane, you always start at the origin. You first move either to the right or left along the **x-axis**.

Write "positive" or "negative" to show which direction you are moving from zero.

5. If you move to the right, you are moving in a Positive direction.
6. If you move to the left, you are moving in a Negative direction.

From your position on the x-axis, you move up or down along the **y-axis**.

Write "positive" or "negative" to show which direction you are moving from zero.

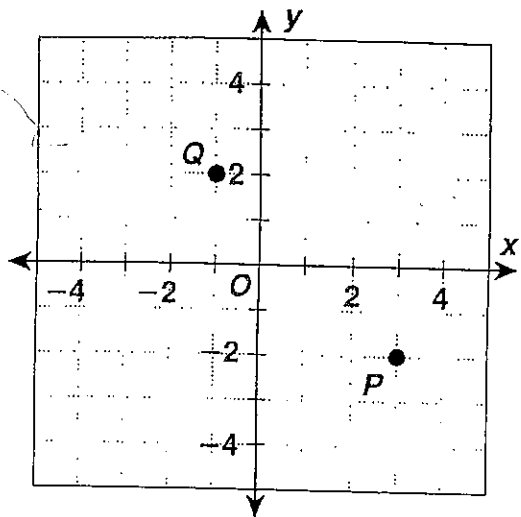
7. If you move up, you are moving in a positive direction.
8. If you move down, you are moving in a Negative direction.

LESSON

Reteach

4-1 The Coordinate Plane

Numbers are graphed on a number line. **Ordered pairs** of numbers are graphed on a **coordinate plane**. A coordinate plane has two perpendicular number lines that divide it into **4 quadrants**. The following chart will help you identify the quadrants and the **coordinates** of points on a coordinate plane.



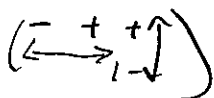
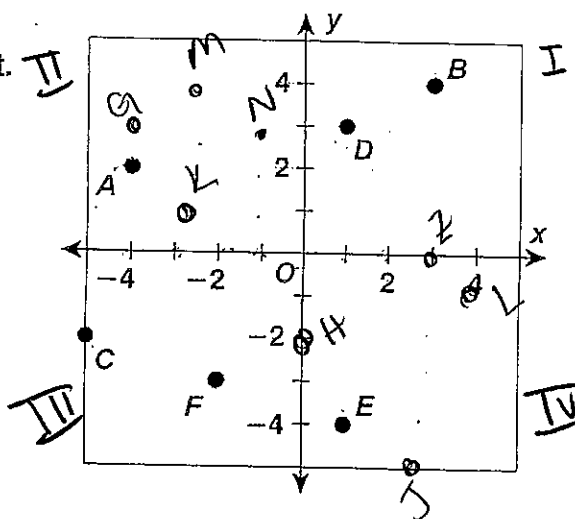
Quadrant II (-, +) (←, ↑)	Quadrant I (+, +) (→, ↑)
Quadrant III (-, -) (←, ↓)	Quadrant IV (+, -) (→, ↓)

To find the coordinates of *P*, start at (0, 0). Move 3 units →, then 2 units ↓. So the coordinates of *P* are (3, -2), and *P* is in quadrant IV.

To plot point *Q* with coordinates (-1, 2), start at (0, 0). Move 1 unit ←, then 2 units ↑. *Q* is in quadrant II.

Identify the quadrant and the coordinates of each point on the coordinate plane at the right.

1. A II, (-4, 2) 2. B I, (3, 4)
 3. C III, (-3, -2) 4. D I, (1, 3)
 5. E IV, (1, -4) 6. F III, (-2, -3)



(x, y)
 ↖ ↗

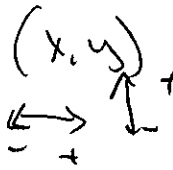
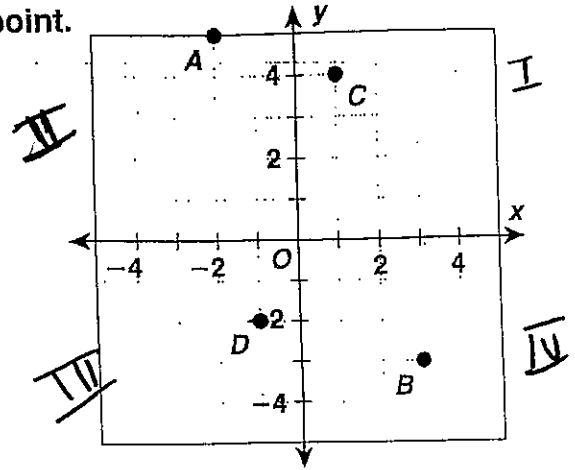
Plot each point on the coordinate plane above.

7. G (-4, -3) 8. H (0, -2) 9. J (3, -5) 10. K (-3, 1)
 11. L (4, -1) 12. M (-3, 4) 13. N (-1, 3) 14. Z (3, 0)

LESSON **Practice C**
4-1 **The Coordinate Plane**

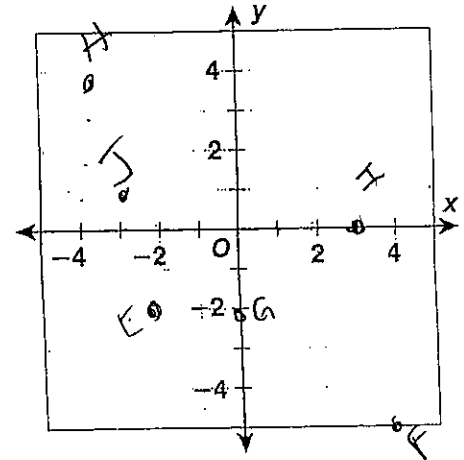
Identify the quadrant that contains each point.
 Give the coordinates of each point.

1. A II (-2, 5)
2. B IV (3, -3)
3. C I (1, 4)
4. D III (-1, -2)



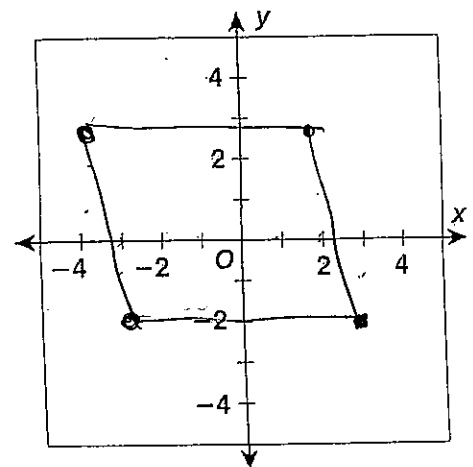
Plot each point on a coordinate plane.

- 5 (-2, -2)
- 6 (4, -5)
- 7 (0, -2)
- 8 (-4, 4)
- 9 (3, 0)
- 10 (-3, 1)



11. Graph the points $(3, -2)$, $(-3, -2)$, $(-4, 3)$ and $(2, 3)$. Connect each point in the order listed. Name the figure and the quadrants in which it is located.

Parallelogram (I, II, III, IV)



Name _____

Date _____

Math; _____

Period _____

Coordinate Geometry

Directions: Plot the given points. Connect with a straight edge in order. Then find the perimeter and area of each.

1. Plot, label, and connect the points below.

A (3,3)

B (-4,3)

C (-4,-3)

D (3,-3)

Perimeter = Sum of the sides

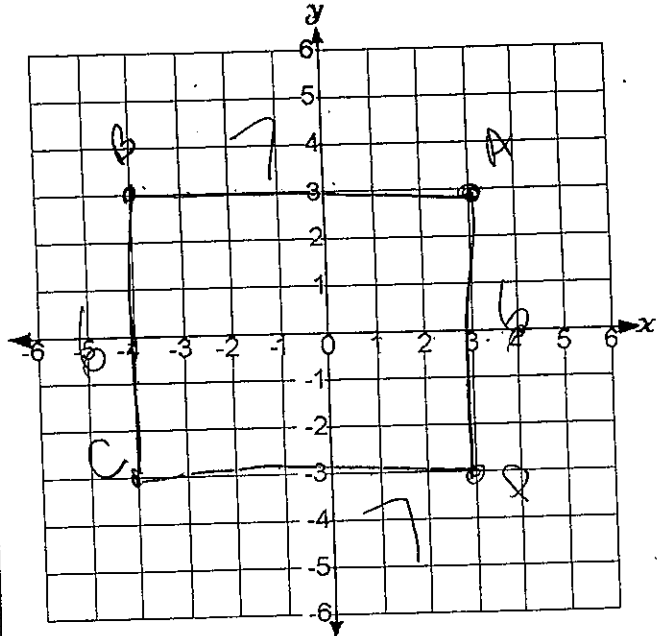
= $6 + 6 + 7 + 7$

P = 26 units

Area = L · W

= $7 · 6$

A = 42 units^2



2. Plot, label, and connect the points below.

E (1,5)

F (-2,5)

G (-2,2)

H (1,2)

Perimeter = Sum of the sides

= $3 + 3 + 3 + 3$

P = 12 units

Area = S^2

= 3^2

A = 9 units^2

