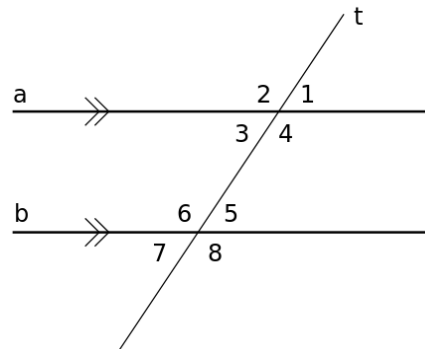
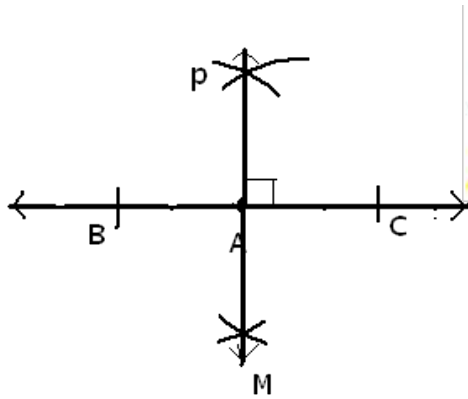
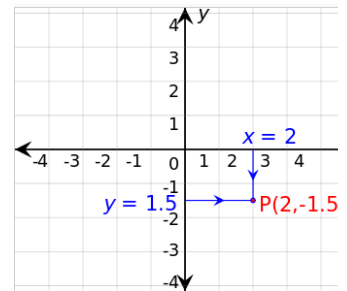
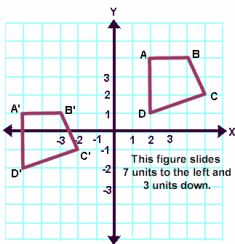



# Unit 8: Geometry



**Section 8.5 First**

**Coordinate Graphing** 

Coordinate graphing is plotting points on a grid, often called a Cartesian grid. The grid has an **x** and a **y** axis.

The x axis is the horizontal axis (it goes from left to right). 

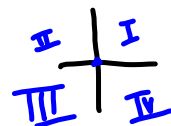
The y axis is the vertical axis (it goes up and down). 

The points that you plot are called **ordered pairs**,  $(x,y)$ . 

The first number in the ordered pair is the x coordinate, and it tells you how far to move to the left or the right. If the x coordinate is positive, move to the right, if the x coordinate is negative, move to the left.

The second number in the ordered pair is the y coordinate and it tells you how far to move up or down. If the y coordinate is positive, move up, if it negative, go down.

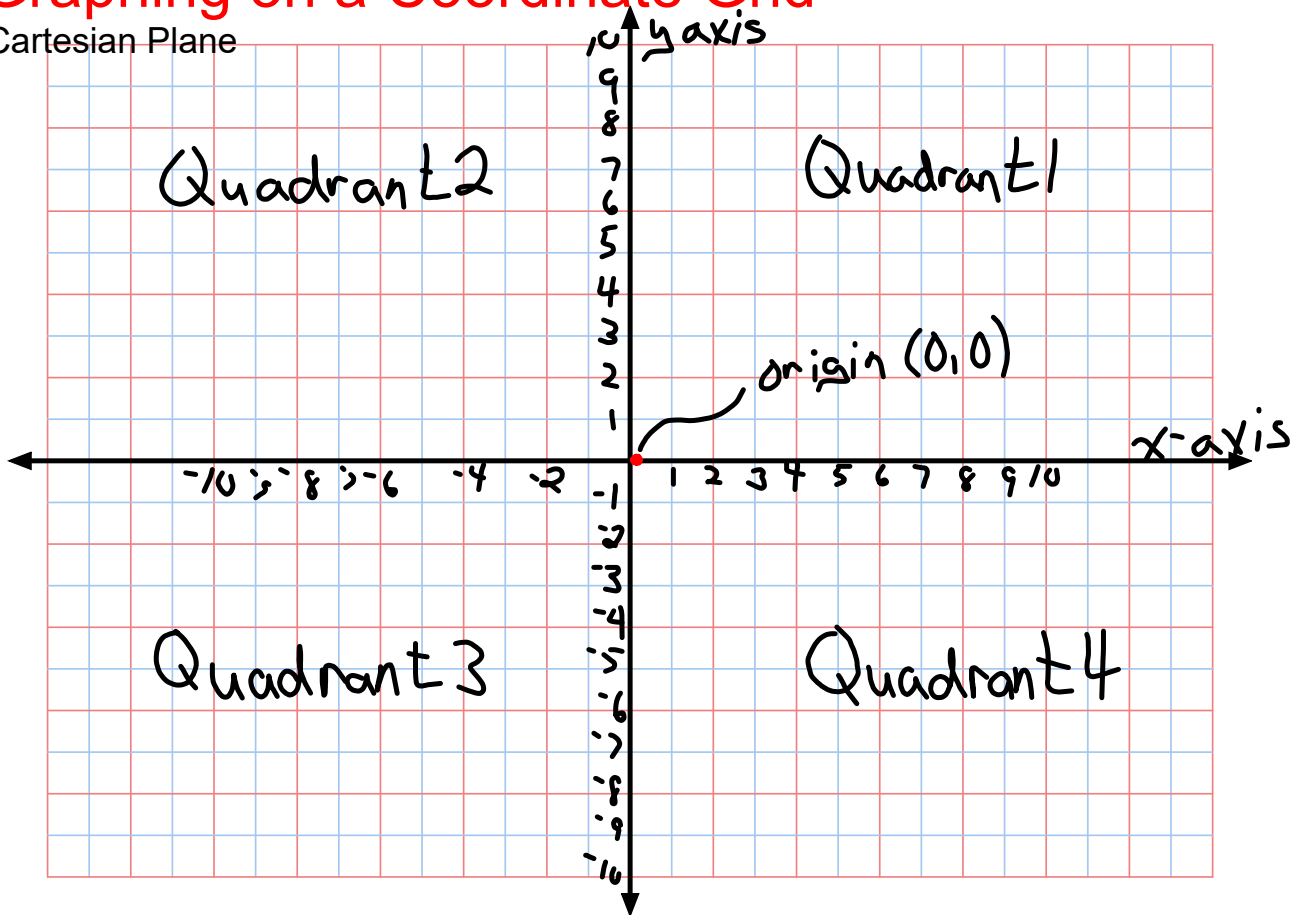
You always start at the **origin**, which is point  $(0,0)$ .



The grid is divided up into 4 sections that are called **quadrants**.

## Graphing on a Coordinate Grid

Cartesian Plane



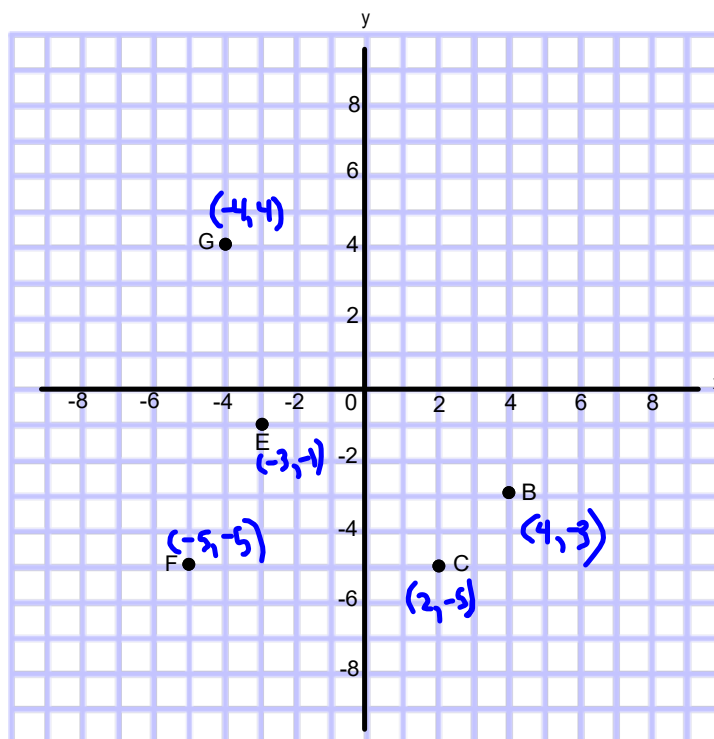
The axes meet at the **origin**,  $(0,0)$ .

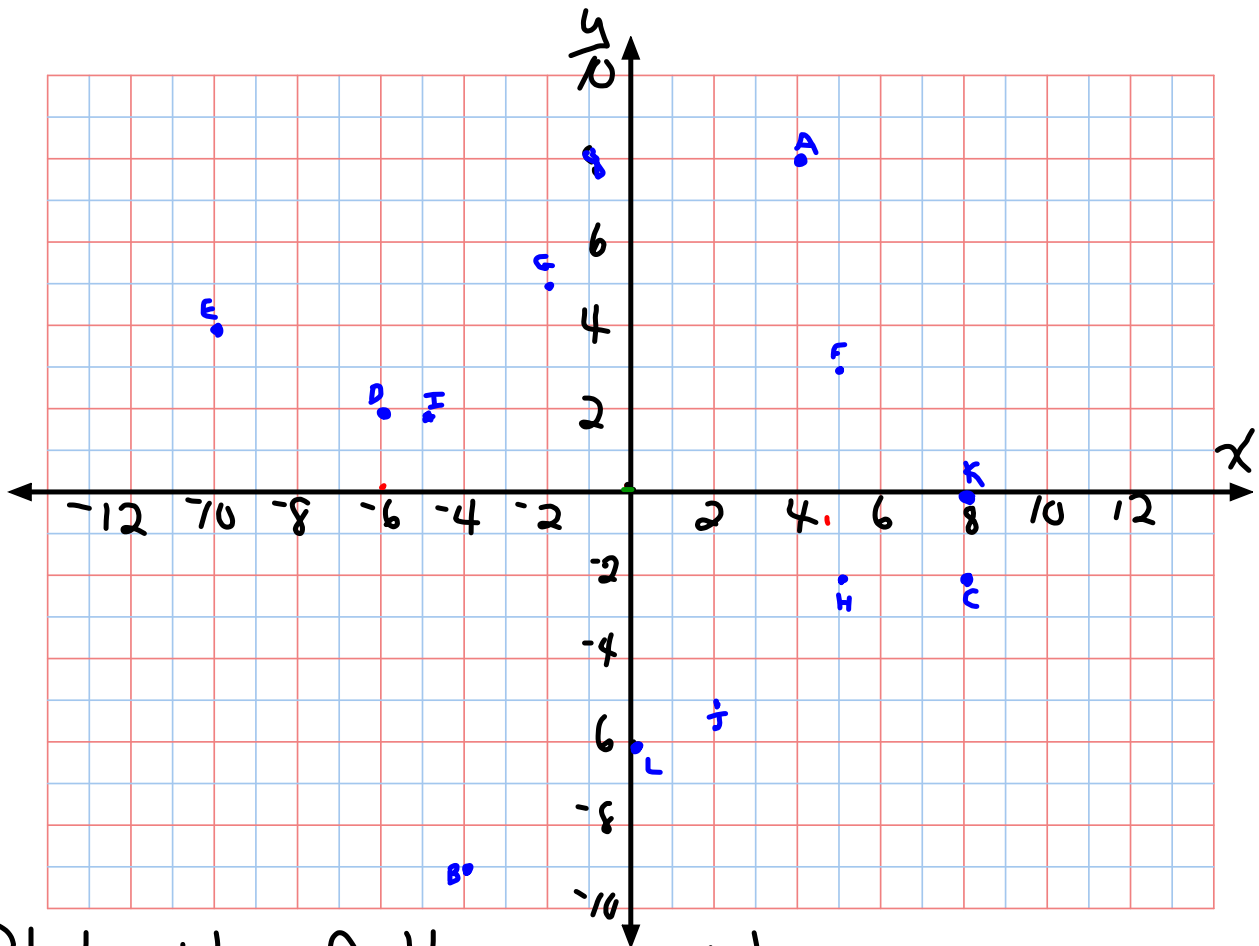
A pair of coordinates is called called an **ordered pair**,  $(x,y)$ .

What is the scale on each axis?

Write the coordinates of each point.

Scale on x axis  $\rightarrow$  1 block  
y axis  $\rightarrow$  1 unit



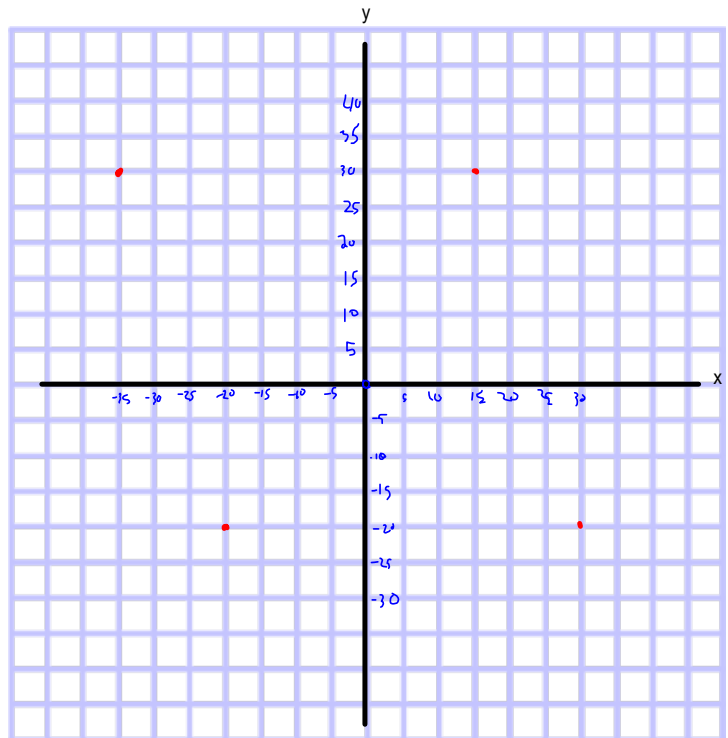


Plot the following points:

- |           |            |           |
|-----------|------------|-----------|
| A(4, 8)   | B(-4, -9)  | C(+8, -2) |
| D(-6, +2) | E(-10, +4) | F(5, 3)   |
| G(-2, 5)  | H(5, -2)   | I(-5, 2)  |
| J(2, -5)  | K(8, 0)    | L(0, -6)  |

Determine an appropriate scale for plotting the following points:  
 $(-35, 30)$ ,  $(15, 30)$ ,  $(-20, -20)$  and  $(30, -20)$ . Create the grid and plot the points.

$(x, y)$

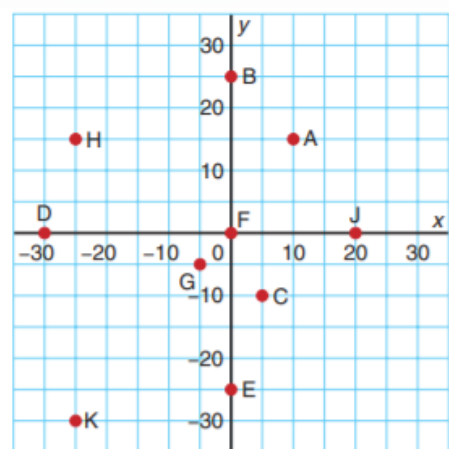


# *Class / Homework*

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1. What is the scale on each axis?  
Write the coordinates of each point from A to K.

2. Use the coordinate grid to the right.  
Which points have:
- a)  $x$ -coordinate 0?
  - b)  $y$ -coordinate 0?
  - c) the same  $x$ -coordinate?
  - d) the same  $y$ -coordinate?
  - e) equal  $x$ - and  $y$ -coordinates?
  - f)  $y$ -coordinate 2?





~~3~~ Draw a coordinate grid. Look at the ordered pairs below.  
Label the axes. How did you choose the scale?

Plot each point.

- |                 |                 |                 |
|-----------------|-----------------|-----------------|
| a) $A(30, -30)$ | b) $B(25, 0)$   | c) $C(-10, 35)$ |
| d) $D(-15, 40)$ | e) $E(15, 5)$   | f) $F(0, -20)$  |
| g) $O(0, 0)$    | h) $H(-20, -5)$ | i) $I(-40, 0)$  |

Which point is the origin?

- ~~4~~ How could you use the grid in question 3 to plot these points?
- a)  $K(3, 5)$                       b)  $P(-10, 2)$                       c)  $R(-7, -8)$

- ✓ 5. Which quadrant has all negative coordinates? All positive coordinates?  
Both positive and negative coordinates?



5. a) Plot these points:  $A(0, 5)$ ,  $B(-1, 4)$ ,  $C(-1, 3)$ ,  $D(-2, 3)$ ,  
 $E(-3, 2)$ ,  $F(-2, 1)$ ,  $G(-1, 1)$ ,  $H(-1, 0)$ ,  $J(0, -1)$ ,  $K(1, 0)$ ,  
 $L(1, 1)$ ,  $M(2, 1)$ ,  $N(3, 2)$ ,  $P(2, 3)$ ,  $R(1, 3)$ ,  $S(1, 4)$
- b) Join the points in order. Then join S to A.
- c) Describe the shape you have drawn.



## solutions to HW

### 8.5 Graphing on a Coordinate Grid, page 318

1. Each grid square represents 5 units.

A(10, 15); B(0, 25); C(5, -10); D(-30, 0);

E(0, -25); F(0, 0); G(-5, -5); H(-25, 15);

J(20, 0); K(-25, -30).

2.a) B, E, and F

b) D, F, and J

c) B, E, and F; H and K

d) D, F, and J; A and H

e) F and G

f) none

3. Answers may vary. For example: Each grid square represents 5 units.

O is the origin.

2a)  $x = 0$

$(0, \neq)$

BEF

b)  $y = 0$

$(\neq, 0)$

DFJ

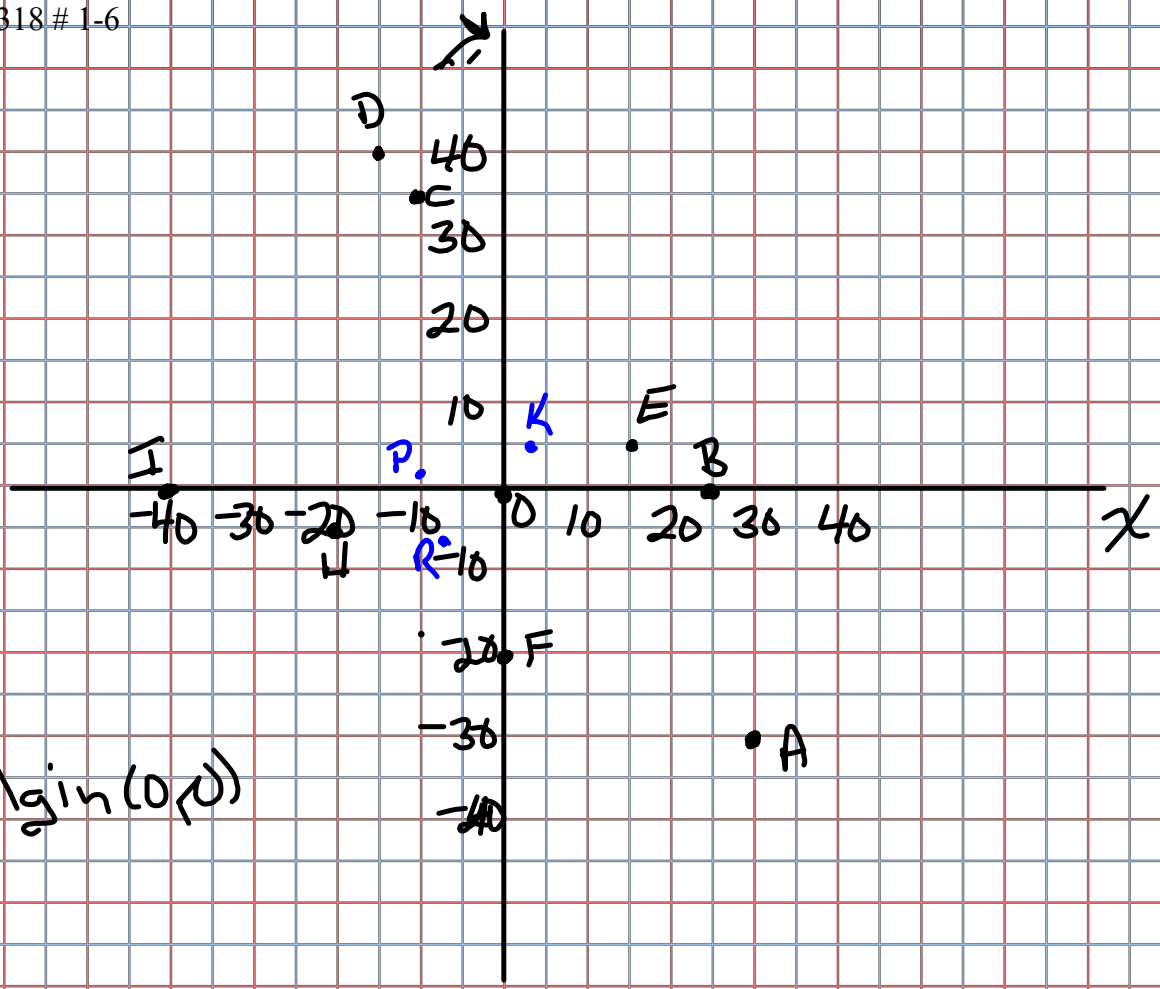
see

next

page

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3.



origin (0,0)

5. Quadrant 1

$x$  and  $y$  are positive

Quadrant 2

$x$  is negative,  $y$  is positive

Quadrant 3

$x$  and  $y$  are negative

Quadrant 4

$x$  is positive,  $y$  is negative.

b.

