

# Coordinate Graphing

April-06-17  
9:30 AM

## Mathematics 9 Linear Relations Coordinate Graphing

### A. Definitions

1. Coordinate Graphing: a form of geometry that uses two intersecting number lines (one horizontal and one vertical) to identify specific points in a two-dimensional object or image.

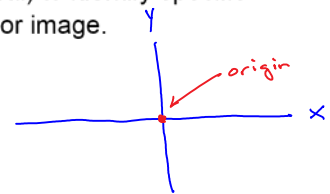
2. X-Axis: is the horizontal line of the coordinate graph.

3. Y-Axis: is the vertical line of the coordinate graph.

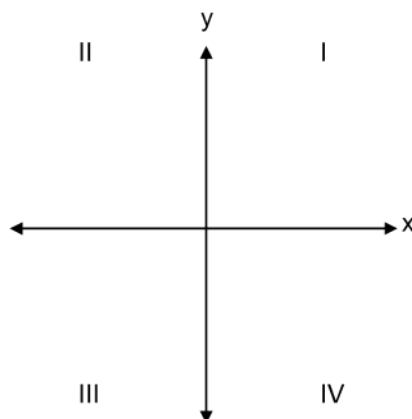
4. Origin: is the place where x-axis and y-axis intersect. The coordinates of the origin are (0, 0)

5. Ordered Pair: is a pair of numbers (one representing an x-coordinate and one representing a y-coordinate) that identify a specific point on a Coordinate Graph. Ordered Pairs are written in the form  $(x, y)$ .

6. Labelling Letter: is a letter from the alphabet used to identify a specific point on a Coordinate Graph.



### B. Quadrants on a Coordinate Graph



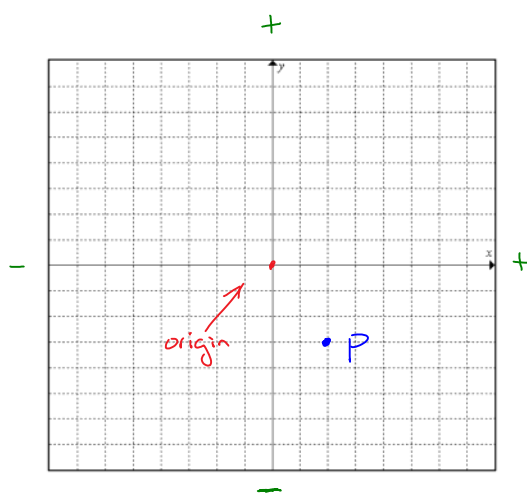
The coordinate graph is broken into 4 quadrants. Each quadrant is labelled with a roman numeral (I, II, III, IV). It is important to learn the quadrants of the graph and which quadrant a specific point is located in.

### C. Plotting Points on a Coordinate Graph

When you plot a point on a coordinate graph you use the x & y coordinates located in the ordered pair to determine the position of the point on the graph. Remember that the two numbers in the pair will represent one point on the graph.

Starting at the origin, move the distance indicated by the x-coordinate first, then move the distance indicated by the y-coordinate. Once you've used both numbers in the pair, make a small point in that position and label the point with the labelling letter.

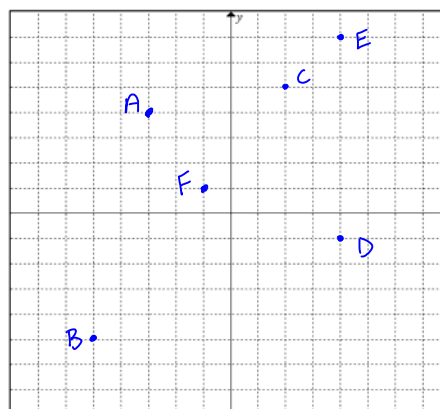
$P(2, -3)$   
labelling letter  $\rightarrow$   
ordered pair  $\rightarrow$



### D. Examples






For each of the following ordered pairs, plot the point on the coordinate graph, label the point with the labelling letter and identify which quadrant the point is located in.

- $A(-3, 4)$  Quad II
- $B(-5, -5)$  Quad III
- $C(2, 5)$  Quad I.
- $D(4, -1)$  Quad IV
- $E(4, 7)$  Quad I.
- $F(-1, 1)$  Quad II



Each set of points gives the coordinates of the <sup>corner points</sup> vertices of a <sup>shape</sup> polygon. Plot and the points, then identify the polygon.

$R(-3, 4)$   $S(2, 2)$   $T(0, -1)$   $U(-5, -1)$

Square   
 rectangle   
 rhombus   
 parallelogram   
 quadrilateral (4 sides) 

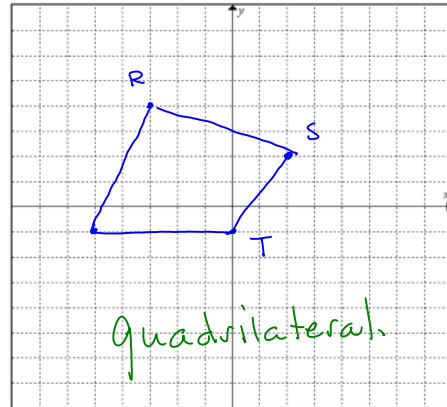
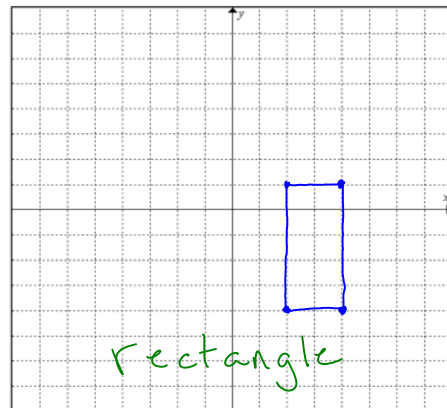


Table of Values

x	y
2	-4
4	-4
4	1
2	1

$(2, -4)$   
 $(4, -4)$   
 $(4, 1)$   
 $(2, 1)$



Assignment: Plotting Ordered Pairs Handout #1 – 7

... Preparing for Chapter 4

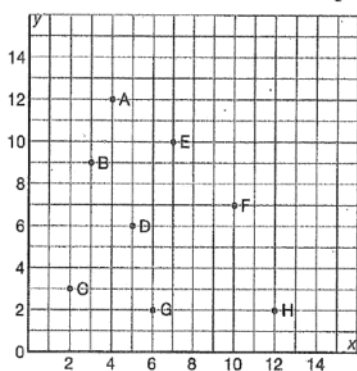
Plotting Ordered Pairs

1. For each ordered pair, identify the  $x$ -coordinate and the  $y$ -coordinate.

- a) (3, 2)      b) (5, 1)      c) (10, 4)  
 d) (4, 8)      e) (1, 0)      f) (2, 2)

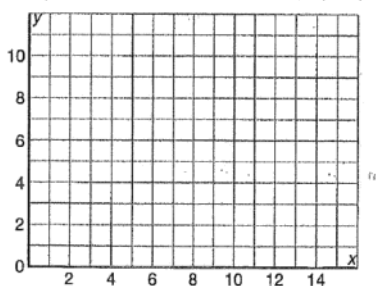
2. For each point on the graph

- a) Identify the  $x$ -coordinate.  
 b) Identify the  $y$ -coordinate.  
 c) Write the coordinates as an ordered pair.



3. Plot each point on the coordinate grid.

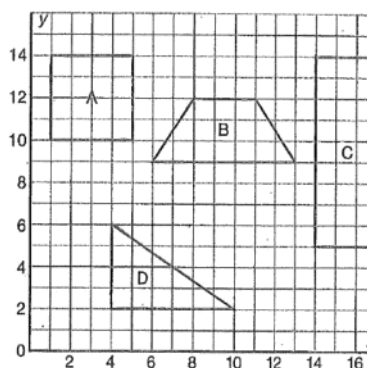
- a) A(1, 6)      b) B(9, 0)      c) C(3, 1)  
 d) D(5, 6)      e) E(10, 4)      f) F(1, 8)  
 g) G(10, 10)      h) H(11, 5)      i) I(6, 2)



4. Each set of points gives the coordinates of the vertices of a polygon. For each set, plot the points on a coordinate grid. Join them with straight lines. Identify the polygon.

- a) A(2, 5), B(5, 7), C(6, 2)  
 b) D(4, 7), E(8, 7), F(5, 4), G(1, 4)  
 c) H(1, 2), I(8, 2), J(8, 5), K(1, 5)  
 d) L(3, 2), M(7, 2), N(7, 6), P(3, 6)

5. State the coordinates of the vertices of each polygon.



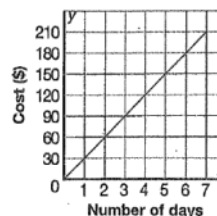
6. What figure is formed by each set of points?

- a) (4, 2), (6, 2), (6, 6), (8, 6), (8, 8), (2, 8), (2, 6), (4, 6), (4, 2)  
 b) (2, 1), (8, 1), (8, 4), (6, 4), (6, 3), (4, 3), (4, 6), (6, 6), (6, 5), (8, 5), (8, 8), (2, 8), (2, 1)

7. The tables list the  $x$ - and  $y$ -coordinates of different figures. For each part, plot the points on a coordinate grid and join them. Describe the figures they form.

a)	b)	c)
$x$	$x$	$x$
$y$	$y$	$y$
4	1	6
9	5	10
7	6	16
12	0	0
0	3	12
5	3	4
2	5	8
7	1	8
6	2	11
11	4	5
1	4	14
6	2	2

8. The  $y$ -axis of a graph does not always have the same scale as the  $x$ -axis. This graph shows the cost of renting a car.



- a) How much does it cost to rent a car for 1 day? 3 days? 4 days? A week?  
 b) For how many days can you rent a car for \$60? \$150? \$180?

# START WITH WHAT YOU KNOW MASTERS — GRAPHICAL ANSWERS

## Master 4.4

