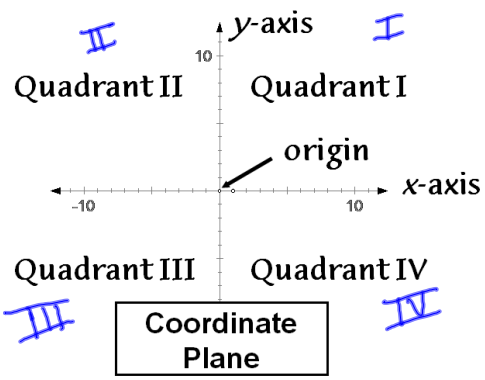
RELATIONS AND FUNCTIONS

Coordinate Plane

- Two number lines that intersect at right angles form a **coordinate plane**.
- The horizontal axis is the **x-axis** and the vertical axis is the **y-axis**.
- The axes intersect at the **origin** and divide the coordinate plane into four sections called **quadrants**.

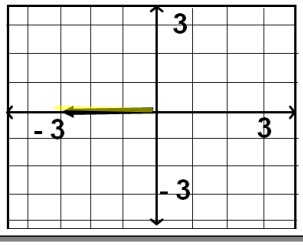


- An **ordered pair** of numbers identifies the location of a point.
- The numbers are the **coordinates** of the point on the graph. (x, y)

Ordered Pair or Coordinates (*x*, *y*)

The first coordinate, *x*, is called the *x*-coordinate or the abscissa. It tells which way and how far to move on the *x*-axis.

A(-3,)

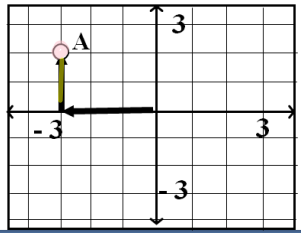


Ordered Pair or Coordinates (*x*, *y*)

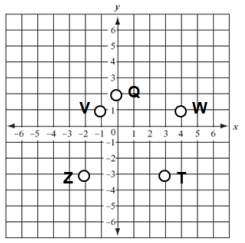
The second coordinate, *y*, is called the *y*-coordinate or the ordinate. It tells which way and how far to move on the *y*-axis.

A(-3, 2)

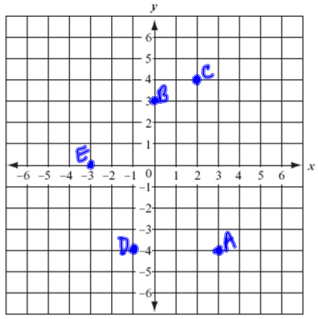
Point A is called graph of the coordinates (- 3, 2)



- Identifying Coordinates
  - Name the coordinates of point Z (-2, -3)
  - Name the coordinates of point T (3, -3)
  - Name the coordinates of point V (-1, 1)
  - Name the coordinates of point W (4, 1)
  - Name the coordinates of point Q (0, 2)



- Graphing Points
  - Graph the following points on the coordinate plane
    - A (3, -4) Quadrant IV
    - B (0, 3) y-axis
    - C (2, 4) I
    - D (-1, -4) III
    - E (-3, 0) x-axis



Domain and Range

- A **relation** is a set of ordered pairs. The (age, height) ordered pairs below form a relation. [(18, 4.25), (20, 4.40), (21, 5.25), (14, 5.00), (18, 4.85)]
  - The **domain** of a relation is the set of first coordinates of the ordered pairs. {14, 18, 20, 21}
  - The **range** is the set of the Second coordinates. {4.25, 4.40, 4.85, 5.00, 5.25}

Giraffes

Age (years)	Height (meters)
18	4.25
20	4.40
21	5.25
14	5.00
18	4.85

- Finding Domain and Range
  - Find the domain and range of the relation represented by the data in the table below.
    - Domain: {-2, -1, 4}
    - Range: {-2, 1, 3}

Domain	Range
4	3
-2	1
-1	3
4	-2
-1	1

*List the values in order. Do not repeat values.

- Find the domain and range of each relation.
  - [(4, 6), (6, 7), (4, 3), (5, 19), (5, 7)]
    - Domain: {4, 5, 6}
    - Range: {3, 6, 7, 19}
  - [(2, -3), (-2, 3), (2, 3), (-2, -3), (3, -2)]
    - Domain: {-2, 2, 3}
    - Range: {-3, -2, 3}

- If a relation is the ordered pair (a,b), then the **inverse** of that relation would be (b,a).
- Example:
  - If a relation is [(-6,-4), (-3, -1), (1,2), (2,4), (3,7)], state the inverse relation. [(-4, -6), (-1, -3), (2, 1), (4, 2), (7, 3)]

PW 9 16 MAR 2012

- pg. 244 # 1-6,
- do inverse relation of # 3 & 4
- & Look what followed me home.

Relations and Functions Day 1