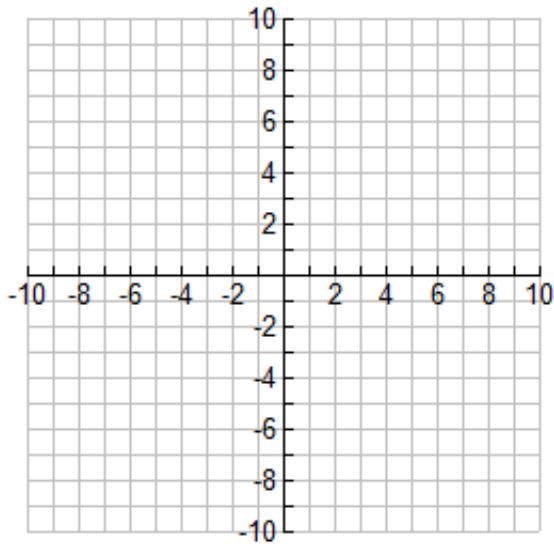


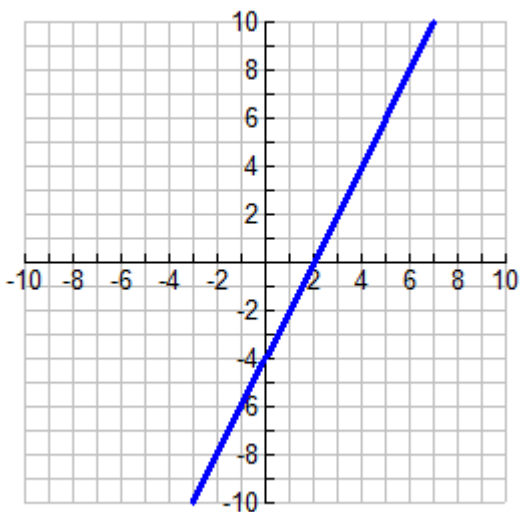
The Coordinate Plane



CAN YOU?

- Label the x-axis.
- Label the y-axis.
- Label the origin.
- Label each of the four quadrants.
- Plot and label points.
A(1, 3)
B(-2, 0)
C(0, 5)
D(-4, 4)
E(8, -3)
- Determine the location of point F.

Reading a Graph

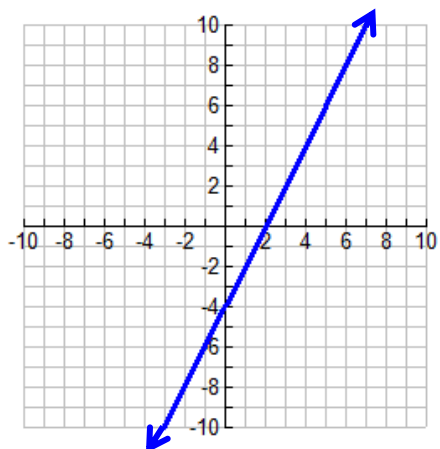


CAN YOU?

- Identify the x-intercept.
- Identify the y-intercept.
- If $x = 6$, then $y = \underline{\hspace{2cm}}$.
- If $y = -8$, then $x = \underline{\hspace{2cm}}$.

More Practice Reading a Graph

- The x-intercept is the place where the graph crosses (intersects) the x-axis.
- The y-intercept is the place where the graph crosses (intersects) the y-axis.
- We write intercepts as ordered pairs, (x, y) .
- Functions may have more than one x-intercept.

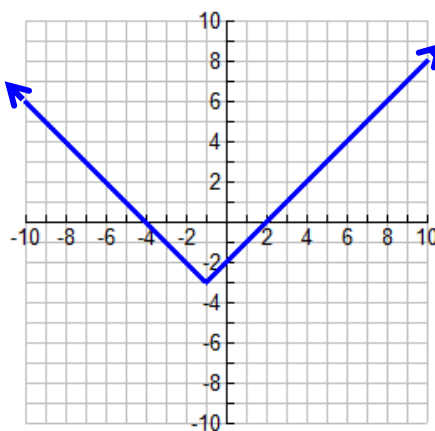


x-intercept:

y-intercept:

If $x = 6$, then $y = \underline{\hspace{2cm}}$.

If $y = 4$, then $x = \underline{\hspace{2cm}}$.

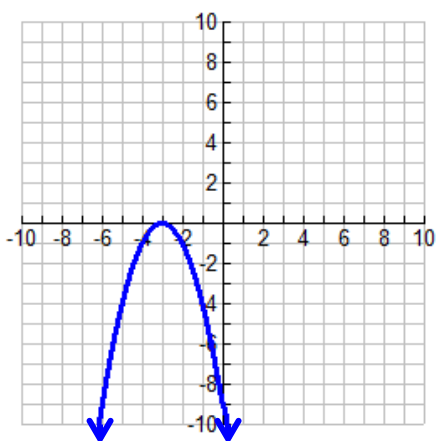


x-intercepts:

y-intercept:

If $x = -9$, then $y = \underline{\hspace{2cm}}$.

If $y = -2$, then $x = \underline{\hspace{2cm}}$ and $\underline{\hspace{2cm}}$.

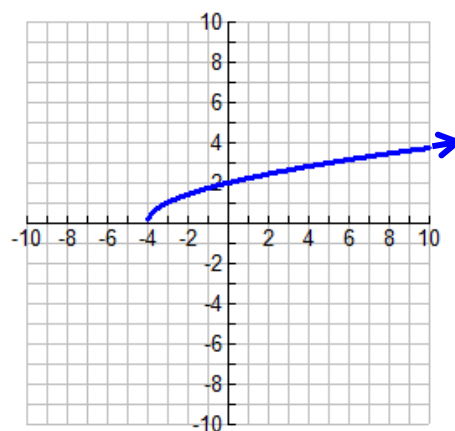


x-intercept:

y-intercept:

If $x = -5$, then $y = \underline{\hspace{2cm}}$.

If $y = -4$, then $x = \underline{\hspace{2cm}}$.



x-intercept:

y-intercept:

If $x = 5$, then $y = \underline{\hspace{2cm}}$.

If $y = 1$, then $x = \underline{\hspace{2cm}}$.

Reading a Table

X	Y
-1	-6
0	-4
1	-2
2	0
3	2

CAN YOU?

- Identify the x-intercept.
- Identify the y-intercept.
- If $x = 1$, then $y = \underline{\hspace{2cm}}$.
- If $y = 2$, then $x = \underline{\hspace{2cm}}$.

More Practice Reading a Table

- The x-intercept is written as an ordered pair $(x, 0)$
- The y-intercept is written as an ordered pair $(0, y)$
- Functions may have zero, one, or many x-intercepts.

X	Y
-4	-18
-2	-4
0	-6
2	0
4	2

x-intercept:

y-intercept:

If $x = -2$, then $y = \underline{\hspace{2cm}}$.

If $y = -18$, then $x = \underline{\hspace{2cm}}$.

X	Y
-1	7
0	4
1	3
2	4
3	7

x-intercept:

y-intercept:

If $x = 1$, then $y = \underline{\hspace{2cm}}$.

If $y = 7$, then $x = \underline{\hspace{2cm}}$.



X	Y
0	1
-1	0
-2	-3
1	0
2	1

x-intercept:

y-intercept:

If $x = -2$, then $y = \underline{\hspace{2cm}}$.

If $y = 1$, then $x = \underline{\hspace{2cm}}$.



DISTANCE FORMULA

- Gives us the distance between 2 points on a graph.
- Written as a number.

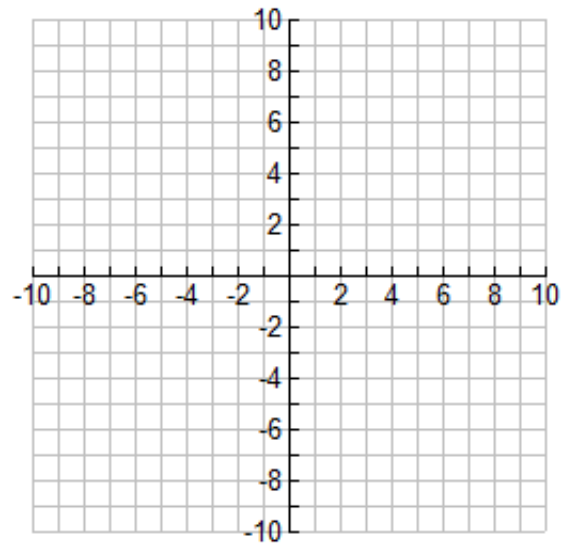
$DISTANCE = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ where you are finding the distance between the points

(x_1, y_1) and (x_2, y_2) .

EXAMPLE 1. Plot the points $(-3, 5)$ and $(12, -3)$, and draw the line segment joining them. How long is this line segment?

Use the Distance Formula to calculate:

How long is the segment?



EXAMPLE 2. Find the distance between $(6, 2)$ and $(-5, -1)$

EXAMPLE 3. Find the distance between $(-4, 5)$ and $(-7, 10)$.

MIDPOINT FORMULA

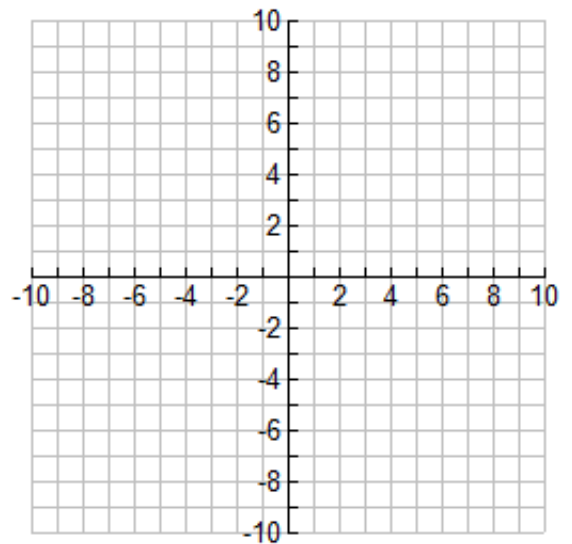
- Gives us the point that is exactly in the middle of a given line segment.
- Written as an ordered pair

$$\text{MIDPOINT} = \left(\frac{x_2 + x_1}{2}, \frac{y_2 + y_1}{2} \right)$$

EXAMPLE 1: Plot the points (-3, 5) and (12, -3), and draw the line segment joining them. Use the Midpoint formula to get the midpoint of the line segment. Then, plot that point.

Midpoint:

Is it in the middle of the line segment?



EXAMPLE 2: Find the midpoint of the line segment that has endpoints (9, -3) and (5, -11)

MIDPOINT:

EXAMPLE 3: Find the midpoint of the line segment that has endpoints (-4, 1) and (-6, -8).

MIDPOINT: