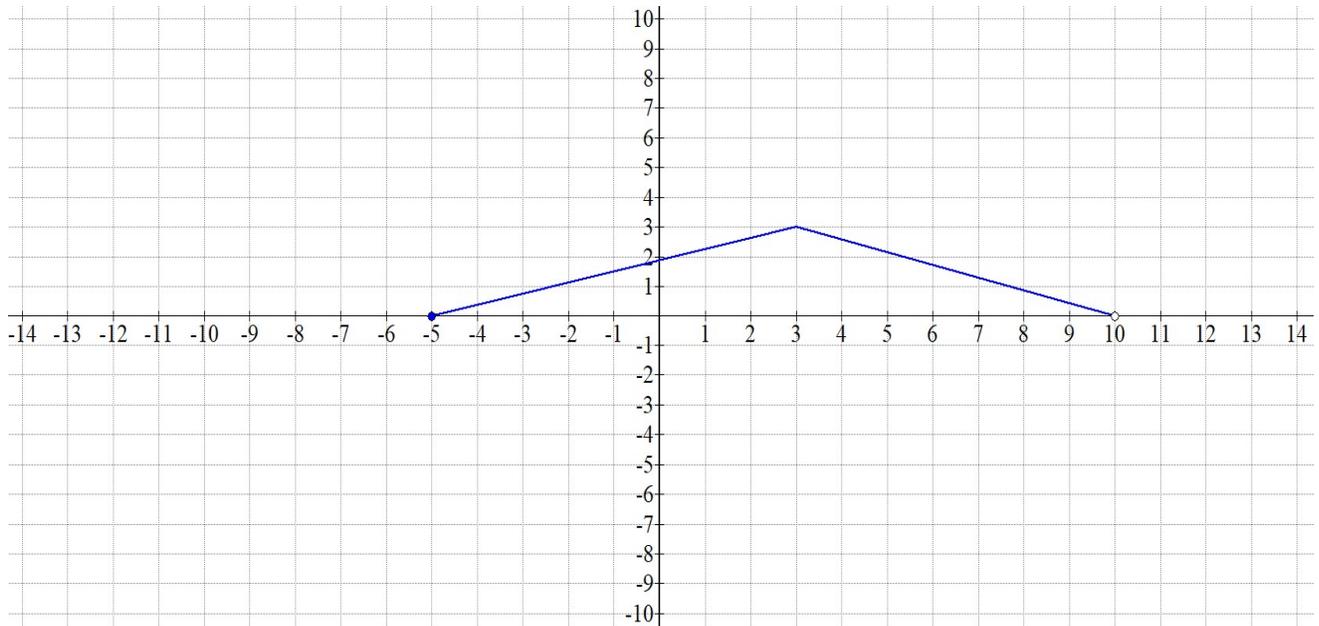


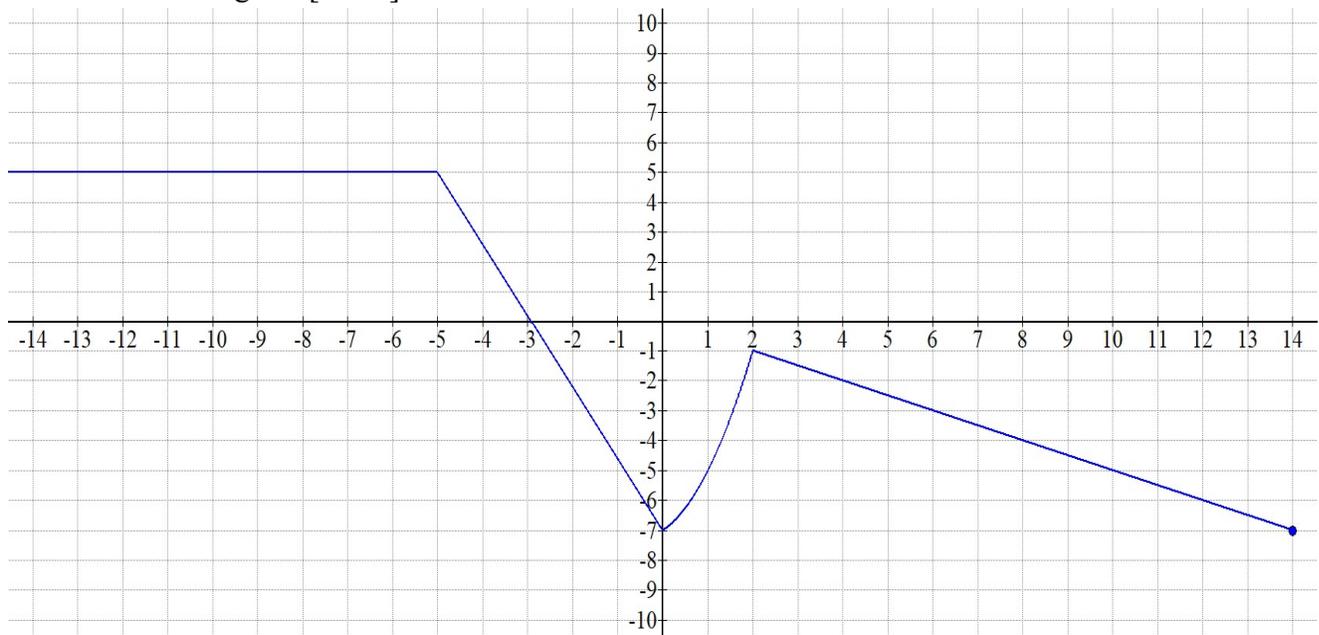
Lesson 3.5 Notes

Create a graph that uses the given conditions.

- 1) The function is increasing from $(-5, 3)$. The function has a domain from $[-5, 10)$. The function has a minimum value of 0 and a maximum value of 3.



- 2) The function has one interval of increasing, two intervals of decreasing, and one constant interval. The function has a range of $[-7, 5]$.



Answer the following questions for $f(x)$.

1) $f(4) =$ _____

The 4 is an x -value, so when $x = 4$, the y -value is 9.

So, $f(4) = 9$

2) $f(-4) =$ _____

The -4 is an x -value, so when $x = -4$, the y -value is -3.

So, $f(-4) = -3$

3) $f(x) = 3, x =$ _____

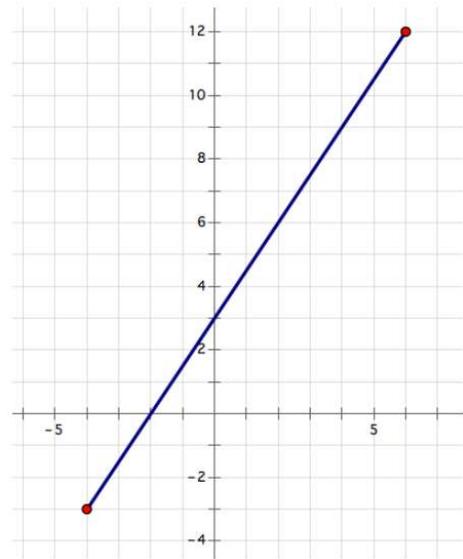
The 3 is a y -value, so when $y = 3$, the x -value is 0.

$f(x) = 3, x = 0$

4) $f(x) = 0, x =$ _____

The 0 is a y -value, so when $y = 0$, the x -value is -2.

$f(x) = 0, x = -2$



For each situation use the given function to find and interpret solutions

Hope has been tracking the progress of her family as they travel across the country. She knows they are driving 78 miles per hour. During their vacation she has created a function, $d(t) = 78t$, to model the progress they are making.

- What would Hope be attempting to find if she writes $d(4)$?
Hope would be attempting to find the distance traveled in 4 hours.
- What would the expression $d(t) = 450$ mean in this situation?
The expression means that the distance traveled is 450 miles.
- What would the expression $d(3.5)$ mean?
The expression means that the family has traveled for 3.5 hours.
- What would Hope write if she wanted to write a rule for the time it takes to travel 800 miles?
Hope would write $d(t) = 800$.
- Find the time it would take to travel 800 miles.
 $800 = 78t$ $\frac{800}{78} = \frac{78t}{78}$ $10.26 \approx t$ It would take about 10.26 hours.
- How would Hope indicate that her family had been traveling for 10 hours?
Hope would write $d(10)$.

Determine whether each defines a function.

- 1) Does the set of ordered pairs define a function?

$$\{(6, 2), (10, 4), (8, 4), (6, 5), (9, 8)\}$$

The ordered pairs do not define a function because the x -value of 6 is paired with two y -values.

- 2) Does the set of ordered pairs define a function?

$$\{(0, 2), (1, 4), (4, 2), (5, 7), (6, 7), (-1, 3), (3, -1)\}$$

The ordered pairs do define a function because no x -value is paired with more than one y -value.