Graphing a Linear Function with a Restricted Domain:

(Do not write on this please)

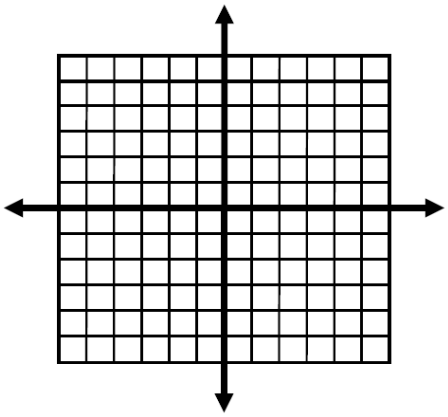
1) Graph the equation lightly in pencil.

2) Use the restricted domain to determine which part of the line should stay and which part of the line should be erased.

   - If the domain has x between two numbers, the graph will be a line segment (no arrows). Example: $-1 \le x \le 2$
   - If the domain has $x \ge$ a number or $x \le$ a number, the graph will be a ray (arrow on one end). Example: $x \ge 0$

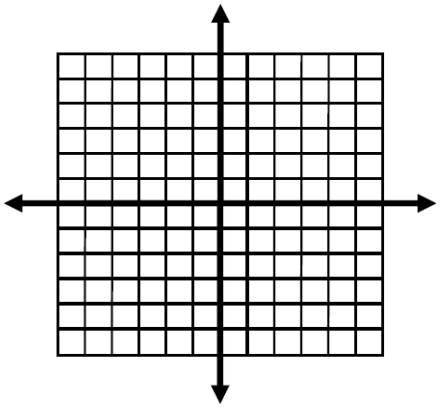
3) Write the range in set builder notation.

Example 1: Graph the function $y = -3x + 1$ with the Domain = $\{ x \in \Re \mid -1 \le x \le 2 \}$



Range: _____

Example 2: Graph the function $y = 2x - 4$ with the Domain = $\{ x \in \Re \mid x \ge 0 \}$

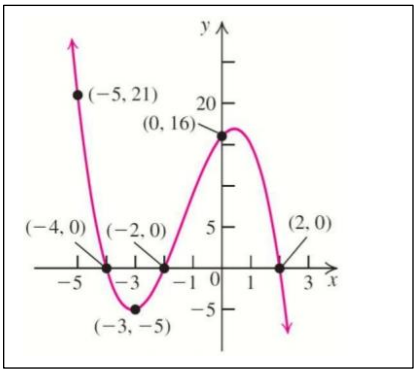


Range: _____

Problem: Refer to the graph on the right.

Write the domain in which the function is/has:

a) increasing
b) decreasing
c) positive
d) negative
e) relative min and relative max



Name:_____ Date:_____ Period:_____

COMPOSITE FUNCTION WORKSHEET

Directions: Show all work for credit. Work must be neat and answer must be circled.

For 1- 9: Let f(x) = 2x – 1, g(x) = 3x, and h(x) = x^2 + 1. Compute the following:

1. f(g(-3))

2. f(h(7))

3. (g∘h)(24)

4. f(g(h(2)))

5. h(g(f(5)))

6. g(f(h(-6)))

7. f(x + 1)

8. g(3a)

9. h(x – 2)

For 10-11: Let f(x) = -3x + 7 and g(x) = $2x^2$ – 8. Compute the following:

10. f(g(x))

11. (g∘f)(x)

12. If $f(x)=3x-5$ and $g(x)=x^2$, find $(f\circ g)(3)$

13. If $f(x)=-9x-9$ and $g(x)=\sqrt{x-9}$, find $(f\circ g)(10)$

$f(x)=4x-3$

Given:

14. Find its inverse.

15. Graph the function and its inverse on the same graph. (what are we looking for here)

16. Use composition to show that $f(x)$ and $f^{-1}(x)$ are inverses.
In other words show that $f(f^{-1}(x))$ and $f^{-1}(f(x))$ both equal x.