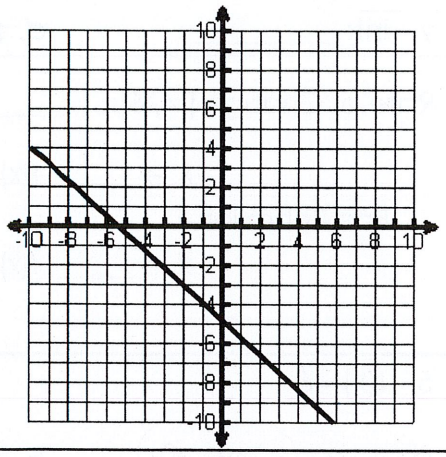
GSE Algebra I | Unit 2 – Linear Functions | 2.11 – Practice

Name: Guide Date: _____

Characteristics of Functions

1.



a. Domain: $(-\infty, \infty)$ b. Range: $(-\infty, \infty)$

c. Increasing: $\emptyset$ d. Decreasing: $(-\infty, \infty)$

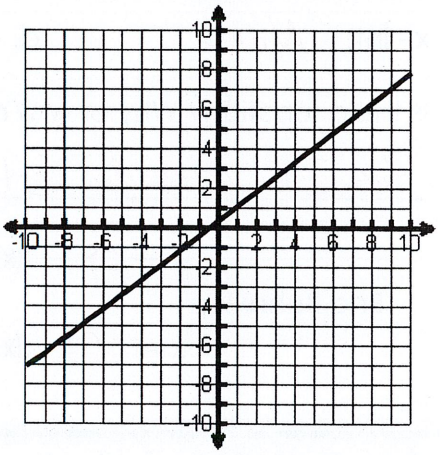
e. y – int: $(0, -5)$ f. x – int: $(-5.5, 0)$

g. End Behavior:

$x \to \infty$ $f(x) \to -\infty$

$x \to -\infty$ $f(x) \to \infty$

2.



a. Range: _____ b. Roots : _____

c. Increasing: _____ d. y - int: _____

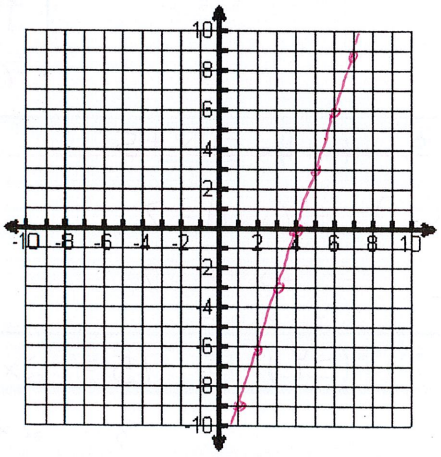
e. Rate of Change [-2, 1]: _____

$x \to$ _____ $f(x) \to$ _____

f. End Behavior:

$x \to$ _____ $f(x) \to$ _____

3. $f(x) = 3x - 12$



a. Domain: $(-\infty, \infty)$ b. y - int: $(0, -12)$

c. Solutions: $x = 4$ d. Decreasing: $\emptyset$

e. Is this a function? Why or why not?

Yes. It passes the vertical line test

$x \to \infty$ $f(x) \to \infty$

f. End Behavior:

$x \to -\infty$ $f(x) \to -\infty$

4. $8x + 2y = 6$

a. Increasing: _____ b. Decreasing: _____

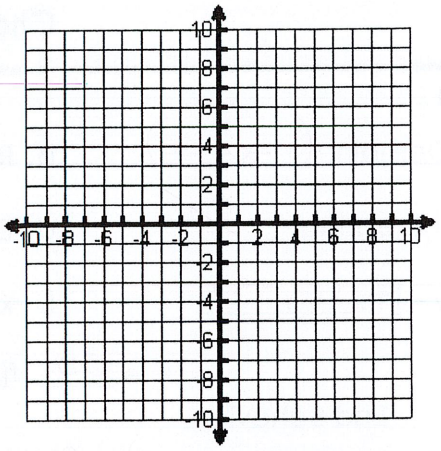
c. y – int: _____ d. zeros: _____

e. Rate of Change [-4, 6]: _____

$x \to$ _____ $f(x) \to$ _____

f. End Behavior:

$x \to$ _____ $f(x) \to$ _____



5. $f(x) = 6$

a. Domain: $(-\infty, \infty)$ b. Increasing: $\emptyset$

c. x - int: None d. Range: $[6]$

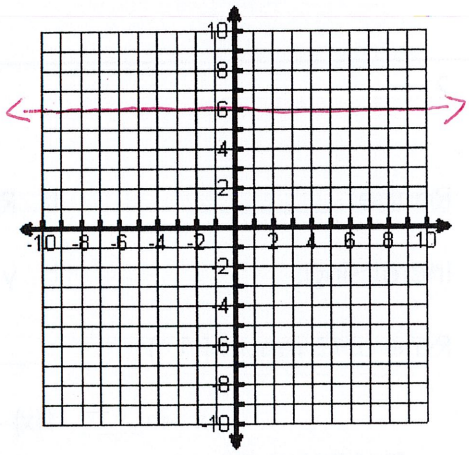
e. Is this a function? Why or why not?

Yes. It passes the vertical line test.

$x \to \infty$ $f(x) \to 6$

f. End Behavior:

$x \to -\infty$ $f(x) \to 6$



Review: Given $f(x) = -x^2 + 4x - 1$ $g(x) = 2x^2 - 5x$ $h(x) = -2x + 7$

6. $f(-2) =$ _____

7. $f(g(1)) =$ -22

$g(1) = 2(1)^2 - 5(1) = -3$

$F(-3) = -(-3)^2 + 4(-3) - 1 =$

8. $h(2) + f(3) =$ _____

9. $h(x+1) =$ $-2x + 5$

$h(x+1) = -2(x+1) + 7$

$= -2x - 2 + 7$

$= -2x + 5$

10. $3g(2) + 1 =$ _____

11. $h(\underline{-4}) = 15$ $15 = -2x + 7$

$8 = -2x$

$-4 = x$