GSE Algebra 1 **Unit 6 Review** Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Show all work! Be sure to read the directions. You are going to do great!!*

1. Graph the following quadratic given the table below. Then label the following.
2. Vertex b) y-int c) Max/Min d) Axis of symmetry





1. For the following, list out all the characteristics provided.

 

Dom: Range: Direc: Discr/Cont

Vertex: Axis of Symm: Max/min

x-ints: y-int: Function?

Incr: Decr: End Beh: $x\rightarrow -\infty $ $y\rightarrow \\_\\_\\_$

 $x\rightarrow \infty y\rightarrow \\_\\_\\_\\_$

1. Evaluate $f\left(x\right)=-x^{2}+3x+5 for the following x values$ (you need to plug **ALL** the numbers in)
2. x = -2 b. x = 0 c. x = 2 d. x = 4
3. Which of the following make $f\left(-3\right)=-2 true? $(**plug in a -3 for x and see which one gives you -2**)
4. $f\left(x\right)=x^{2}+3x+2$ b. $f\left(x\right)=x^{2}+5x+4$
5. $f\left(x\right)=x^{2}-3x-4$ d. $f\left(x\right)=(x+4)(x+1)$
6. Consider the functions**: *f(x) = x2 + 2 g(x) = 3x***

At what x value(s) are f(x) and g(x) the same? (Hint: make a table)

Which has a larger average rate of change (**slope**) from x = 3 to x = 5?

1. Functions ***f(x)* and *g(x)*** are graphed below.


**For which values of x is f(x) ˃ g(x)?**

1. x < 0 b. 0 < x < 2
2. 0 < x < 4 d. x < 0 or x > 4
3. For the following, find the slope from x = 5 to x = 20.



**For # 8 – 11:** Label the following as exponential, linear, quadratic or neither.

1.  9)



10) Mrs. DeLay has 20 gray hairs and every week, she adds 12 more?

11) Create a table that is neither linear, exponential, nor a quadratic!

**Multiply** out the following to put them in **standard** **form**.

1. $2\left(x-3\right)(x+7)$ 13) $-5x(3x-8)$ 14) $(-4x-5)(9x+2)$

15) Given the following equation of a quadratic, list out all that you know.

$$y=(x+4)(x-2)$$

1. x-ints: b. Standard form: c. y-int:
2. direction: e. Domain: f. Max/Min:
3. In class we have been talking about linear, exponential, and quadratic functions. I’d like you to write an explanation that explains the differences between a linear, an exponential, and a quadratic for the following:

**Rate of Change:**

**Domain:**

1. Determine if the following are Linear, Quadratic, Exponential or all three:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ My range is: $(-\infty , \infty )$.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I can have 0, 1, or 2 x-intercepts.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ I only have one end behavior.



1. Create a graph that contains the following information:

Domain: $(-\infty , \infty )$ Range: $(-\infty ,4]$

Axis of Symmetry: x = 2 y-intercept: (0,0)

x-intercepts: (0,0) & (4,0)