Name: Key   **Date:** _____

ALG 2 - Quiz Review 2.1 - 2.2

CONCEPTS	BASIC	INTERMEDIATE	ADVANCED
Describing Transformations	1	2, 4	3
Graphing Quadratics	5	6, 7	8
Vertex	5	6, 7	8
Axis of Symmetry	5	6, 7	8
Vertex Form	5		
Standard Form		6	
Creating a t-chart	5, 6	7	8
x-intercepts, Roots, Zeros, Solutions	7, 8		
Intercept, Root, Factored Form		7	8
y-intercept	9, 10		
Domain/Range		9, 10	
Direction of Opening	9, 10		
Maximum/Minimum	9, 10		
Evaluating Functions	11 - 14		

1 – 4: Describe the transformation in words from the parent function, $f(x) = x^2$, represented by $g(x)$.

1. $g(x) = (x - 4)^2 + 2$

$\rightarrow 4u \quad \uparrow 2u$

2. $g(x) = -2(x)^2$

$R_x \, ; \, VS2$

3. $g(x) = \left(\frac{1}{3}x\right)^2 - 4$

$HS3 ; \downarrow 4u$

4. $g(x) = \frac{1}{2}(x + 5)^2$

$VC\frac{1}{2} ; \leftarrow 5u$

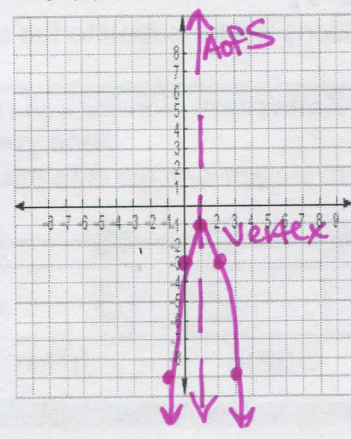**5 – 6: Graph the function using the table provided. Label the vertex and axis of symmetry. Use correct notation.**

5. $g(x) = (x - 2)^2 - 3$
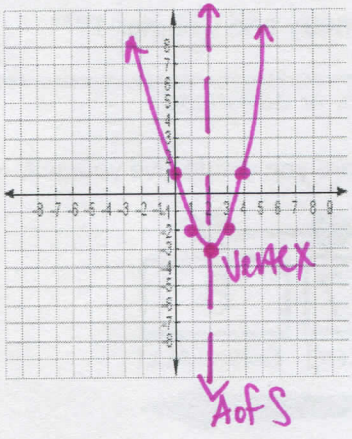
x	g(x)	y
0	$(0-2)^2 - 3$	1
1	$(1-2)^2 - 3$	-2
2	$(2-2)^2 - 3$	-3
3	$(3-2)^2 - 3$	-2
4	$(4-2)^2 - 3$	1

Vertex: $(2, -3)$

AofS: $x = 2$

6. $f(x) = -2x^2 + 4x - 3$

x	f(x)	y
-1	$-2(-1)^2 + 4(-1) - 3$	-9
0	$-2(0)^2 + 4(0) - 3$	-3
1	$-2(1)^2 + 4(1) - 3$	-1
2	$-2(2)^2 + 4(2) - 3$	-3
3	$-2(3)^2 + 4(3) - 3$	-9

Vertex: $(1, -1)$

AofS: $x = 1$

7 – 8: Graph the function using the table provided. Label the x-intercepts, vertex, and axis of symmetry. Use correct notation.
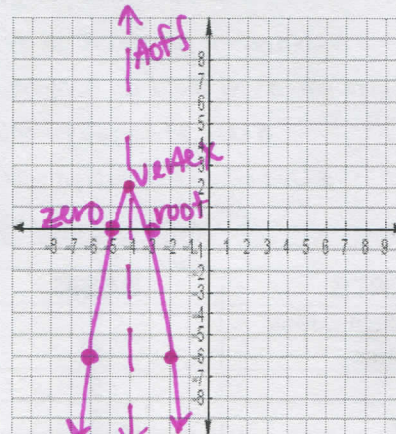
7. $g(x) = (x - 4)(x + 2)$
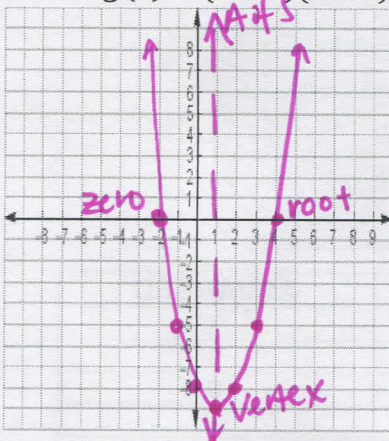
x	g(x)	y
-2	(-2-4)(-2+2)	0
-1	(-1-4)(-1+2)	-5
0	(0-4)(0+2)	-8
1	(1-4)(1+2)	-9
2	(2-4)(2+2)	-8
3	(3-4)(3+2)	-5
4	(4-4)(4+2)	0

x-intercepts: $(4,0)$ & $(-2,0)$
Vertex: $(1,-9)$
AofS: $X=1$

8. $g(x) = -2(x + 3)(x + 5)$

x	g(x)	y
-1	-2(-1+3)(-1+5)	-16
-2	-2(-2+3)(-2+5)	-6
-3	-2(-3+3)(-3+5)	0
-4	-2(-4+3)(-4+5)	2
-5	-2(-5+3)(-5+5)	0
-6	-2(-6+3)(-6+5)	-6
-7	-2(-7+3)(-7+5)	-16

x-intercepts: $(-5,0)$ $(-3,0)$
Vertex: $(-4,2)$
AofS: $X=-4$

9 – 10: State the y-intercept, and circle the word maximum or minimum based on the graph. Describe the domain and range (in interval notation), and tell whether the graph opens up or down by circling the correct word.

9. $y = -x^2 + 4x - 1$
y-intercept: $(0,-1)$
Maximum or Minimum *(Maximum circled)*
Domain: $(-\infty, \infty)$
Range: $(-\infty, 3]$
Opens Up or Down *(Down circled)*

10. $y = 3x^2 + 6x - 4$
y-intercept: $(0,-4)$
Maximum or Minimum *(Minimum circled)*
Domain: $(-\infty, \infty)$
Range: $[-7, \infty)$
Opens Up or Down *(Up circled)*

11 – 14: Evaluate the following functions with the given x value. Show work for partial!

11. $f(x) = x^2 - 2x + 3; f(-2)$

$f(-2) = 11$

12. $g(x) = -2x^2 + 3x - 7; g(1)$

$g(1) = -6$

13. $h(x) = -x^2 - 4; h(h(0))$

$h(h(0)) = -20$

14. $f(x) = 3x^2 - x; f(f(-1))$

$f(f(-1)) = 44$

Spiral ACT questions will be added to the quiz from Algebra 1, Geometry and Chapter 1!

CYU Reflection: *How far can you go: basic, intermediate, or advanced?*
Rate your mastery level!
How confident are you with the skills this CYU covered? Circle the score you would give yourself.

1 2	3 4 5	6 7	8
Basic	Intermediate	Advanced	Solved ALL!