Review Worksheet for Unit 3C Quiz

Name_____ Date_____

What is the Standard Form of a Quadratic Function? $y = ax^2 + bx + c$

What is the Vertex Form of a Quadratic Function? $y = a(x-h)^2 + k$

What is the Intercept Form of a Quadratic Function? $y = a(x-p)(x-q)$

I. State the vertex and give the direction the parabola opens?

1. $y = -4(x-2)^2 + 3$

(2,3); down

2. $f(x) = 7x^2 + 14x + 4$

(-1,-3); up

3. $h(x) = -(x+3)(x-7)$

(2,25); down

4. $y = 2(x+6)^2 - 8$

(-6,-8); up

II. Describe all of the transformations compared to the parent graph ($y = x^2$) for each equation.

5. $g(x) = \frac{1}{5}x^2 - 6$

Shrink 1/5
down 6

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

- Reflect
- Stretch 4
- left 2

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

- Right 4
- up 1

8. $y = -\frac{3}{2}x^2$

- Reflect
- Stretch 3/2

* Hint: 3/2 is bigger than 1 *

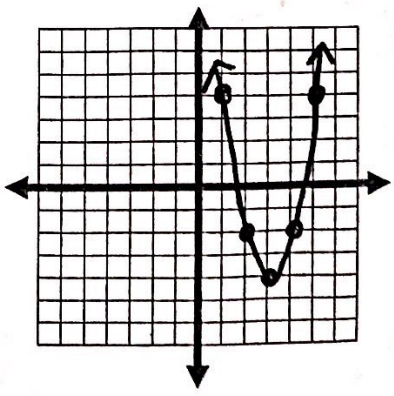
III. Find the vertex and AOS. Use a table of values to graph each quadratic function.

9. $y = 2(x-3)^2 - 4$

V: (3,-4)

AOS: x = 3

x	y
1	4
2	-2
3	-4
4	-2
5	4

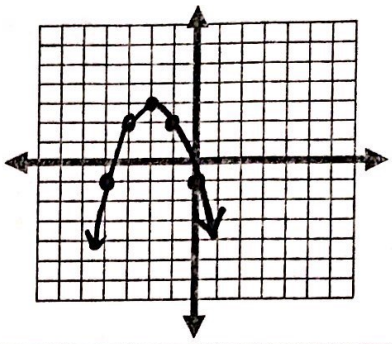


10. $f(x) = -x^2 - 4x - 1$

V: $(-2, 3)$

AOS $x = -2$

x	y
-4	-1
-3	2
-2	3
-1	2
0	-1

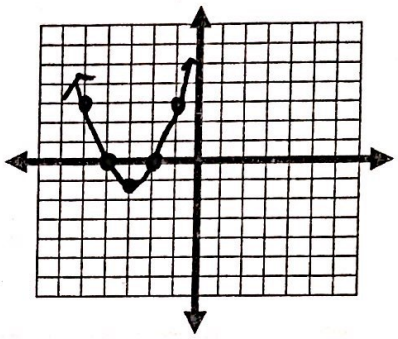


11. $y = (x+4)(x+2)$

V: $(-3, -1)$

AOS $x = -3$

x	y
-5	3
-4	0
-3	-1
-2	0
-1	3



IV. Rewrite each equation in Standard Form.

12. $y = -4(x+1)^2 + 5$

$y = -4x^2 - 8x + 1$

13. $f(x) = 3(x-2)^2 - 7$

$f(x) = 3x^2 - 12x + 5$

14. $f(x) = 3(x-2)^2 - 7$

$f(x) = 3x^2 - 12x + 5$

15. $y = (3x+2)(4x-3)$

$y = 12x^2 - x - 6$

V. Rewrite each equation in Vertex Form.

16. $g(x) = x^2 - 10x + 5$

$g(x) = (x-5)^2 - 20$

17. $y = 2x^2 - 12x + 3$

$y = 2(x-3)^2 - 15$

18. $y = -x^2 + 10x - 4$

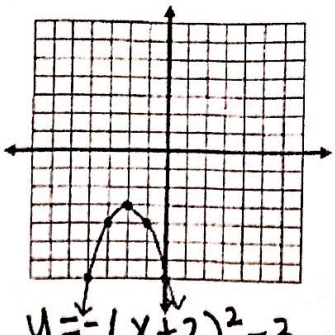
$y = -(x-5)^2 + 21$

19. $f(x) = 3x^2 + 12x - 7$

$f(x) = 3(x+2)^2 - 19$

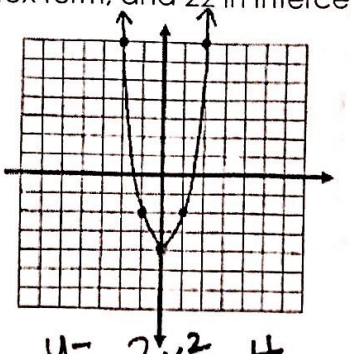
VI. Write the equation of 20 & 21 in vertex form, and 22 in Intercept form.

20.



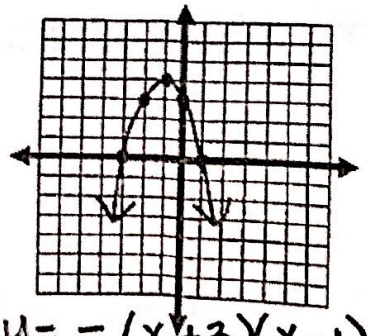
$y = -(x+2)^2 - 3$

21.



$y = 2x^2 - 4$

22



$y = -(x+3)(x-1)$