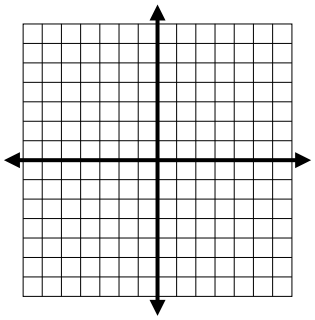
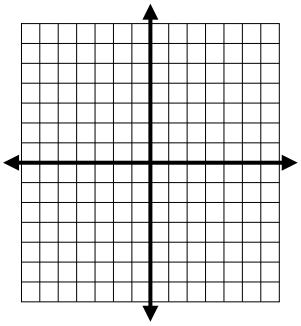
Unit 10 Ticket to Retake Name_____

#1 -2 Identify the Vertex and Axis of Symmetry. Sketch the graph

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



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



#3-5. Is the ordered pair a solution to the function $y = -4x^2 + 1$?
Yes or No. Show all work necessary.

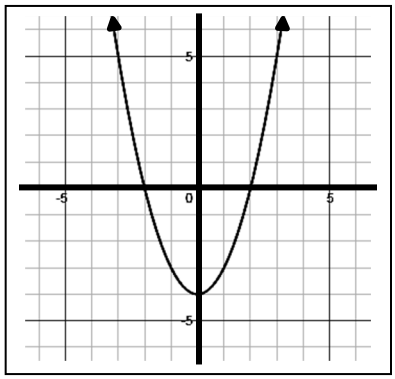
3. $(1, -3)$

4. (0, -1)

5. (-2, 15)

3. _____ 4._____ 5._____

#6 - 9 Answer the following questions for $k(x) = x^2 - 4$.



6. What is the minimum value of k(x)? 6. ____

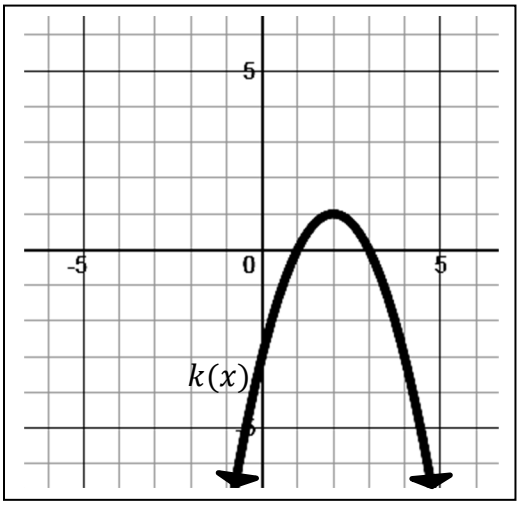
7. What is the axis of symmetry? 7. ____

8. $k(x)$ is increasing when x_____? 8.____

9. What are the x intercept? 9. ___

10. $f(x) = x^2$ and $g(x) = (x + 3)^2 - 2$. $f(x)$ is mapped on to $g(x)$ by the transformation of: 10. ___

#11 - 13. The graph of $k(x)$ is shown in the graph below. Selected values of the quadratic function, $m(x)$, are shown in the table. Answer the following questions below.



x	-3	-1	2	5	7
$m(x)$	-2	1	3	1	-2

11. The maximum value of $m(x)$ is ____
The maximum value of $k(x)$ is _____

12. What is the value of x when $m(x)$ is at its maximum? _____
What is the value of x when $k(x)$ is at its maximum? _____

13. What are the x-intercepts of k(x)? _____

#14-16. For $f(x) = x^2 - 5x + 4$, determine if the number is a zero of $f(x)$ and select **YES or NO. Show all work necessary.**

14. $x = -4$ 15. $x = 4$ 16. $x = 1$

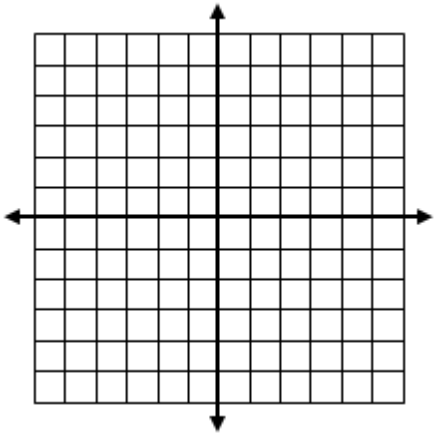
14._____ 15._____ 16._____

17. The height of a golf ball is modeled by the equation, $h(t) = -16(t-2)^2 + 55$ where t is the time in seconds and h is the distance from the ground. Find the time that it takes the baseball to reach its highest point. 17.___

Show all work for full credit.

12.1 (F.IF.5 and F.IF.7a)

18. Graph $y = 2(x-3)^2 + 1$ and determine the key features.



18a. Vertex _____

b. Domain _____

c. Range _____

d. Axis of Symmetry

_____

12.2 (F.LE.3 and F.IF.6)

19. Given $f(x) = x^2$ *and* $g(x) = 2^x$ evaluate:

a. Average rate of change of $f(x)$ from $x = 1$ *to* $x = 4$ 19. _____

b. Average rate of change of $g(x)$ from $x = 1$ *to* $x = 4$ 19b. _____

For # 20-23, Find the zeros by the method of your choice. If there is no solution, write *none*.

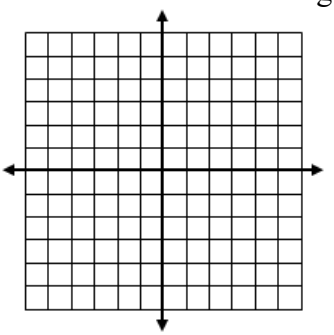
20. $3x^2 - 48 = 0$ 21. $(x-2)^2 - 25 = 0$ 20. _____

21. _____

22. $-3(x+2)^2 + 18 = 0$ 23. $x^2 - 4x - 45 = 0$ 22. _____

23._____

24. Factor and sketch the graph of $y = x^2 - 2x - 8$, and state:



a. x intercepts (____, 0) (____ , 0)

b. x value of the axis of sym. _____

c. vertex _____