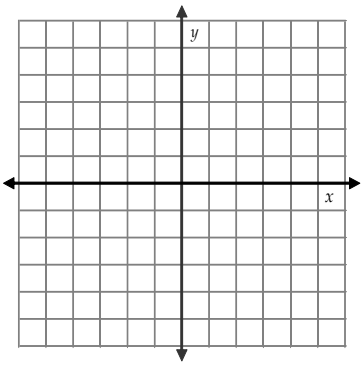
Math 3: Review for Chapter 2 Test **Name**_____

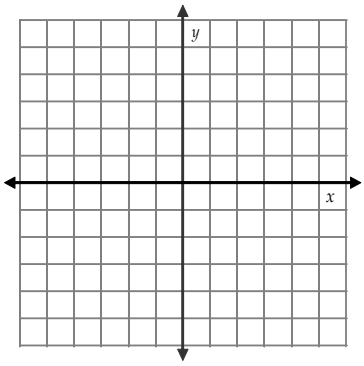
On problems 10-18, show all work and circle answers.

Graph the following functions. Clearly label important points.

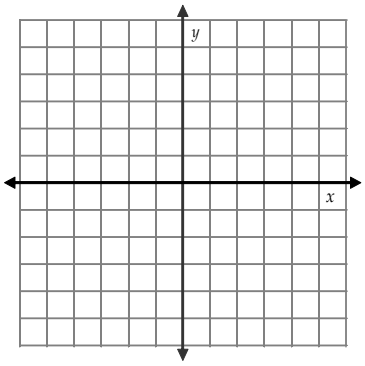
1. $f(x) = 2x - 5$



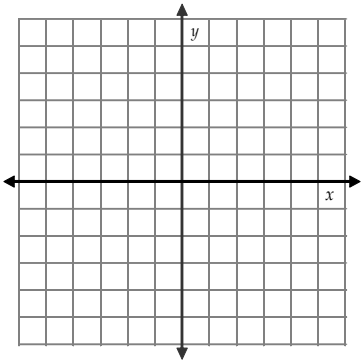
2. $f(x) = \frac{1}{4}|x - 1| - 2$



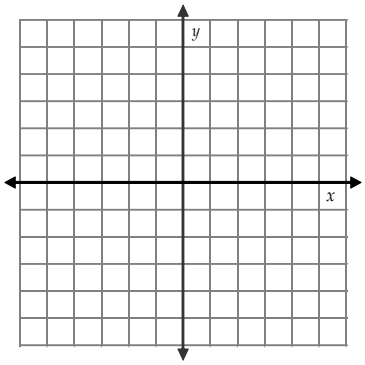
3. $f(x) = -3(x + 2)^2 - 1$



4. $f(x) = 3(x - 2)(x - 4)$



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



Describe the transformation from the parent function. Use as much vocabulary as possible.

6. $f(x) = \frac{1}{3}(x + 10)^2 - 12$

_____

_____

7. $f(x) = -5|x - 6| + 2$

_____

_____

Write a function g whose graph represents the indicated transformation of the graph of f.

8. $f(x) = 5x^2 + 1$

translation 3 units right and 2 units up

_____

9. $f(x) = |x|$

reflection in the x-axis followed by a vertical shrink by a factor of ½ _____

Solve the systems

10. $x - y + z = 5$

$-x + 4y + 2z = 10$

$-x + 3y - 5z = -7$

11. $x + y - z = 7$

$2x - 3y + z = 2$

$4x + 2y - 2z = 20$

12. You throw a pop fly to your friend. The path of the ball is modeled by $f(x) = -6x^2 + 24x + 4$

(x is in seconds and the function gives the height of the ball in feet)

a. What was the highest point(maximum) the ball reached? _____

b. How high is the ball after 3 seconds? _____

Write an equation of a quadratic with the following characteristics.

13. Vertex (–3, 6) and passing through the point (1 , 9)

14. x-intercepts –7 and 2 passing through the point (– 1, – 54)

Complete the square to find the vertex. Identify the vertex.

15. $y = x^2 + 8x - 5$

(16.) $y = 2x^2 - 12x + 10$

Use differences to determine whether the data is linear, quadratic or neither. If linear or quadratic, write an equation for the data.

17.

Time, t	**0**	**1**	**2**	**3**	**4**
Height, h	**5**	**8**	**17**	**32**	**53**

18.

Time, t	**5**	**6**	**7**	**8**	**9**
Distance, d	**46**	**58**	**70**	**82**	**94**