Algebra Homework Week: 23, Feb. 11-15 Name _____

MONDAY

Solve by factoring.

$$\mathbf{12x^2 - 30x = 0}$$

Solve by taking square roots.

$$\mathbf{6x^2 + 5 = 155}$$

Rewrite the following in vertex form using completing the square. Show all work!

$$\mathbf{y = 3x^2 + 30x + 2}$$

Solve by completing the square.

$$\mathbf{x^2 + 18x = -3}$$

Solve using the quadratic formula.

$$\mathbf{3x^2 - 7x = 1}$$

Rewrite from vertex form to standard form.

$$\mathbf{y = -2(x - 3)^2 + 4}$$

Solve using any method.

$$\mathbf{2x^2 - 6x - 1 = 3}$$

Find the discriminant and determine the number of solutions.

$$3x^2 - 2x + 1 = 0$$

Rewrite from standard to vertex form.

$$y = 2x^2 + 28x - 3$$

An object is launched at 19.6 meters/sec from a 58.8-meter-tall platform. The equation for the object's height s at time t seconds after launch is $s(t) = -4.9t^2 + 19.6t + 58.8$, where s is in meters. When does the object strike the ground?

The length of a rectangle is 6 inches more than its width. The area of the rectangle is 91 square inches. Find the dimensions of the rectangle.

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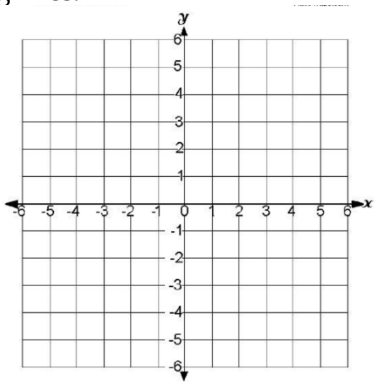
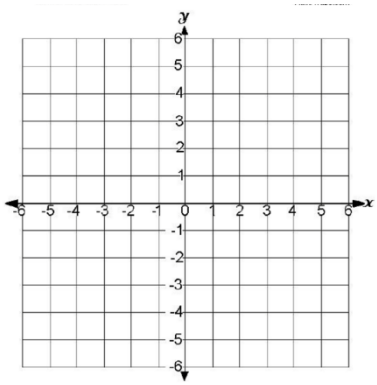
WEDNESDAY

Graph the following lines.

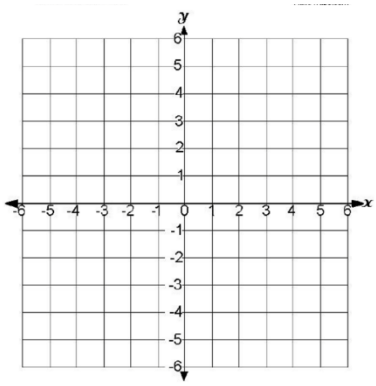
$y = x$



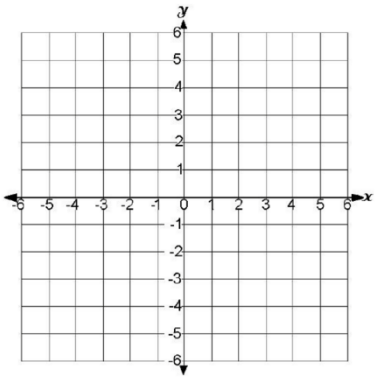
$y = x + 2$



$y = 2x$



$y = -2x$



THURSDAY

Describe the transformations from the parent function $f(x) = x^2$.

a. $f(x) = x^2 + 5$

b. $f(x) = (x + 5)^2 - 4$

The function $y = \frac{2}{5}x + 4$ is shifted down 7 units. What is the equation of the new function?

Describe the transformations from f(x):

a. $f(x + 4) - 12$

b. $-f(x)$

c. $3f(x - 2) + 1$

If the function $h(x)$ goes through the point $(-5, 7)$, then the function $-h(x)$ must go through what point?

Identify the transformation that shifts to $y = \frac{1}{5}x - 6$ the function $y = \frac{1}{5}x + 2$.