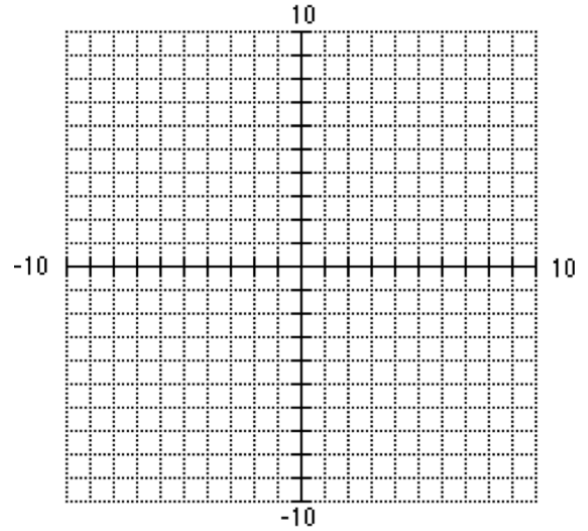


1. Graph $y = -2x^2 + 12x - 8$

- a. This graph has a Max. or Min. value. (circle one)
- b. The y-intercept is _____
- c. The vertex is _____
- d. The axis of symmetry is _____
- e. The domain is _____
- f. The range is _____
- g. On the graph, shift the parabola 3 units down and two units right.
The new vertex is _____.



2. Emmie is a track and field athlete who competes in shot put (an event that requires pushing a heavy ball through the air as far as possible). On Emmie's last 'put' the height of the ball, h , when x feet from Emmie can be modeled by the equation $h = -0.021x^2 + 0.6x + 6$.

- a. Find the maximum height of the throw. _____
- b. Determine how far from Emmie the shot put landed. _____

3. Rewrite the following equation in vertex form.

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

Vertex form: _____

Vertex: _____

4. Use: $-3x^2 + 6x - 1 = y$

- a. How many terms? _____
- b. Leading coefficient? _____
- c. Values of a , b , & c ? _____
- d. Discriminant = _____
- e. How many solutions? _____
- f. Use the quadratic formula to find the solutions and leave answer as simplified radical _____
- g. Use the quadratic formula to find the solutions as decimal values (round to 100ths). _____

5. Write the equation in vertex form $y = x^2 - 10x + 6$

Vertex form: _____

The vertex: _____

6. Simplify each radical

a. $\sqrt{27}$

b. $\sqrt{75}$

c. $\sqrt{32}$