Graphing Quadratic Functions in Standard Form Homework

Name _____ **Date** _____

Graph each Quadratic function using a table of values.
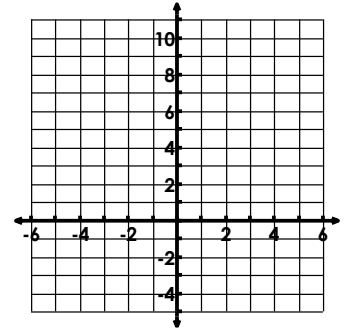
Standard Form: $y = ax^2 + bx + c$

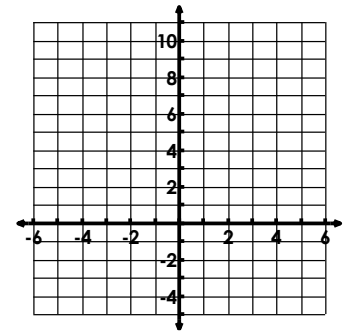1. $y = x^2 - 6x + 8$

   Vertex:_____

   AOS:_____

x	y

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2. $y = x^2 + 4x$

   Vertex:_____

   AOS:_____

x	y

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3. $y = -x^2 - 2x + 1$

   Vertex:_____

   AOS:_____

x	y

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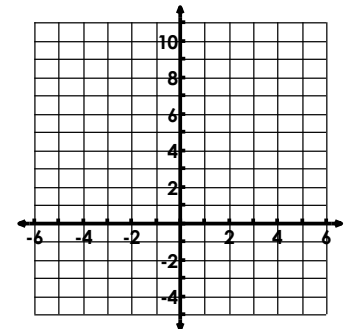
4. $y = 2x^2 - 12x + 16$

   Vertex:_____

   AOS:_____

x	y

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

x	y

Vertex:_____

AOS:_____

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6. $y = 2x^2 + 8x + 15$

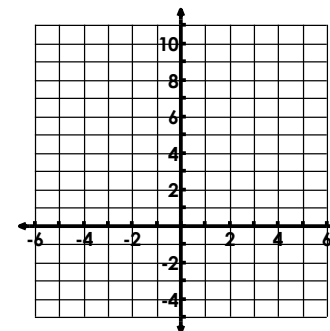| x	y

Vertex:_____

AOS:_____

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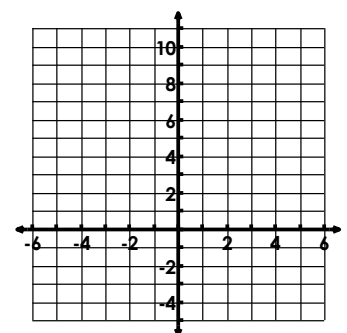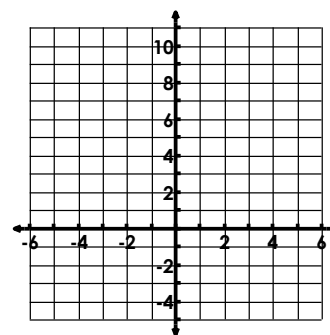
7. Each of the "golden arches" at a McDonald's is in the shape of a parabola. Each arch is modeled by: $h(x) = -x^2 + 6x$, where h(x) is the height of the arch(in feet) at a distance x (in feet) from one side.

a. Find the equation of the axis of symmetry.

b. How high is the arch at the axis of symmetry?

8. The tallest building in the USA is in Chicago, Illinois. It is 1450ft. tall. How long would it take penny to drop from the top of the building to the ground? Use the formula $h = -16t^2 + h_0$.

9. A rocket is shot upward with an initial velocity of 125 feet per second from a platform 3 feet above the ground. Use the model $h = -16t^2 + v_0 t + h_0$ to find the maximum height of the rocket.

10. If an object is thrown vertically upward, its height h, above the ground in feet after t seconds is given by $h = h_0 + v_0 t - 16t^2$, where h_0 is the initial height from which the object is thrown and v_0 is the initial velocity of the object. Using this formula solve the problem.

A ball thrown vertically into the air has the equation of motion $h = 48 + 32t - 16t^2$.

a. How high is the ball at t=0?

b. How high is the ball at t=1?

c. When does the ball hit the ground again?