8.4 Worksheet #2 Name_____Date_____Period_____

Write the following equations in standard form.

1) $f(x) = 2(x-3)^2 + 4$

2) $f(x) = -3(x+2)^2 - 5$

3) $f(x) = -(x+5)^2 + 6$

Write the following equation in vertex form.

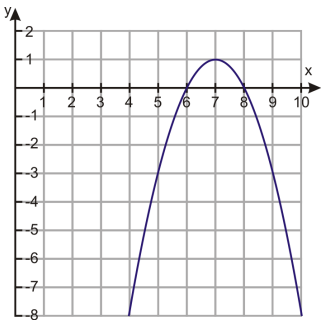
4) $f(x) = x^2 - 6x + 4$

5) $f(x) = -2x^2 - 8x + 5$

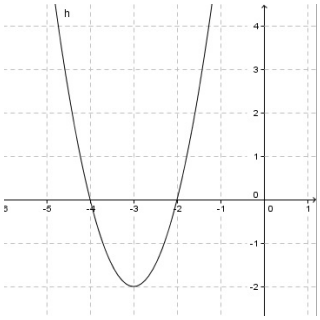
6) $f(x) = \frac{1}{2}x^2 - 6x + 3$

Write the equation in both forms for the following graph.

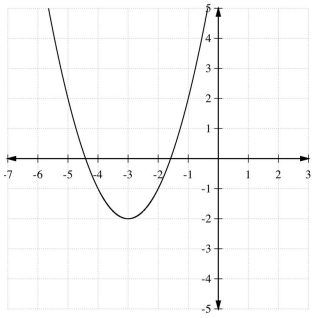
7)



8)



9)



10) An Olympic diver is competing for a medal. His height in feet above the water can be modeled by the function $f(x) = -3x^2 + 6x + 24$, where x is the time in seconds after he begins to dive. Find the total time in the air before he reaches the water.

11) Tanisha kicks a soccer ball during a game. The height of the ball, in feet, can be modeled by the function $f(x) = -16x^2 + 48x$, where x is the time in seconds after she kicks the ball. Find the maximum height of the ball and how long it takes the ball to reach that height.

12) A juggler tosses a ring into the air. The height of the ring in feet above the juggler's hands can be modeled by the function $f(x) = -16x^2 + 16x$, where x is the time in seconds after the ring is tossed. Find the ring's maximum height above the juggler's hands and the time it takes the ring to reach this height. Then find how long the right in the air.

Graph the following functions.

13) $f(x) = 2(x-2)^2 - 4$

Vertex:_____

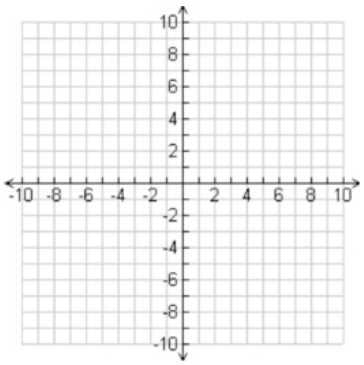
A.O.S.:_____

y-int:_____

Max/Min. Value:_____

Domain:_____

Range:_____



14) $f(x) = -2(x+3)^2 + 8$

Vertex:_____

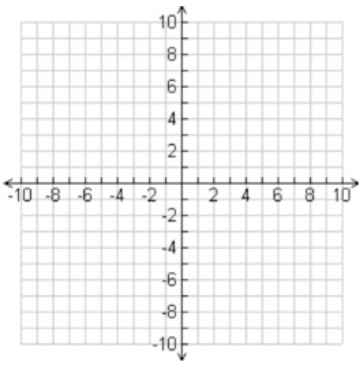
A.O.S.:_____

y-int.:_____

Max/Min. Value:_____

Domain:_____

Range:_____



15) $f(x) = \frac{1}{2}(x-4)^2 + 2$

Vertex:_____

A.O.S.:_____

y-int.:_____

Max/Min. Value:_____

Domain:_____

Range:_____