Name: _____ **Adv. Algebra 2**

Date: _____ Period:_____ **Chapter 4: Quadratics**

4.1-4.2 Review

Graph the following functions. State the vertex, AOS, domain, range, max/min, and transformations.

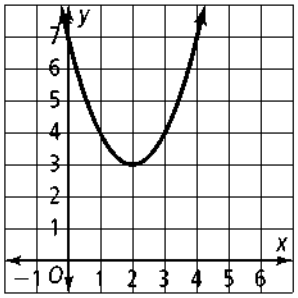
1. $y = \frac{1}{2}(x-2)^2 + 3$
2. $y = (x+2)^2 - 1$
3. $f(x) = -4(x-3)^2 + 2$

Graph the following functions. State the vertex, AOS, domain, range, max/min, and the y-intercept.

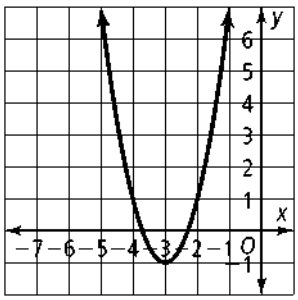
4. $f(x) = x^2 - 4x + 1$
5. $f(x) = -x^2 + 6x - 10$
6. $f(x) = 3x^2 - 8x$

Write a quadratic model to function each graph.

7.



8.



Write each function in vertex form.

9. $y = x^2 - 8x + 19$
10. $y = 2x^2 - 12x + 11$
11. $y = -\frac{1}{2}x^2 - 3x + 3$

12. A small independent motion picture company determines the profit P for producing n DVD copies of a recent release is $P = -0.02n^2 + 3.40n - 16$. P is the profit in thousands of dollars and n is in thousands of units.

a. How many DVDs should the company produce to maximize the profit?

b. What will the maximize profit be?

13. A local nursery sells a large number of ornamental trees every year. The owners have determined the cost per tree C for buying and caring for each tree before it is sold is $C = 0.001n^2 - 0.3n + 50$. In this function, C is the cost per tree in dollars and n is the number of trees in stock.

a. How many trees will minimize the cost per tree?

b. What will the minimum cost per tree be?

14. Jason jumped off a cliff into the ocean in Acapulco while vacationing with some friends. His height as a function of time could be modeled by the function $h(t) = -16t^2 + 16t + 480$, where t is the time in seconds and h is the height in feet.

a. How long did it take Jason to reach his maximum height?

b. What was the highest point that Jason reached?