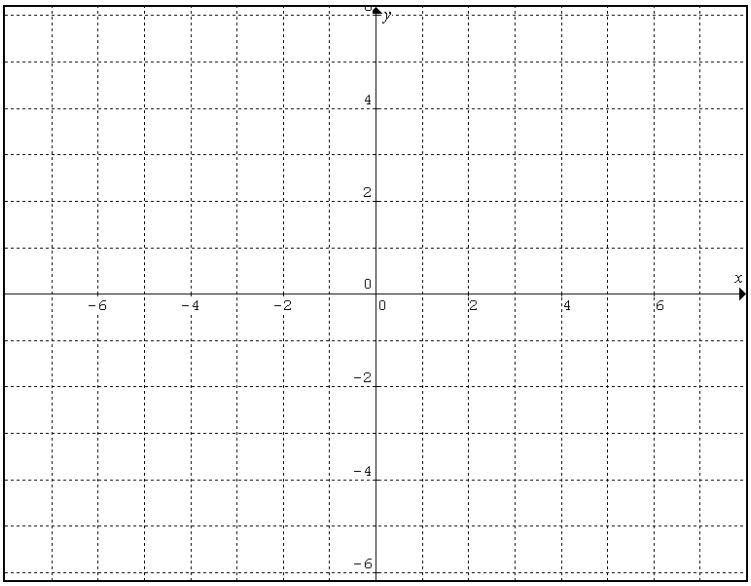
Name: _____

Review for Chapter 7
Quadratic Functions in Vertex Form
$y = a(x - p)^2 + q$

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

$p =$ _____ $q =$ _____ $a =$ _____	
Coordinates of the vertex	
Axis of symmetry	
Opening	
Range	
Domain	
Min/Max value	



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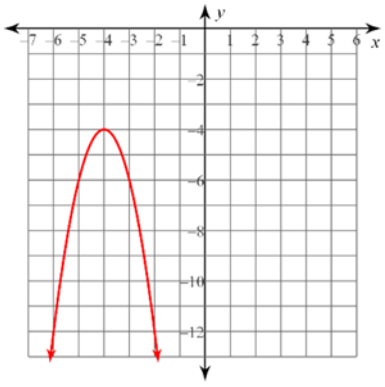
2. Determine a quadratic function in vertex form that has the following characteristics:
vertex at (0,-3) and passes through the point (5,-4).

3. Determine a quadratic function in vertex form.



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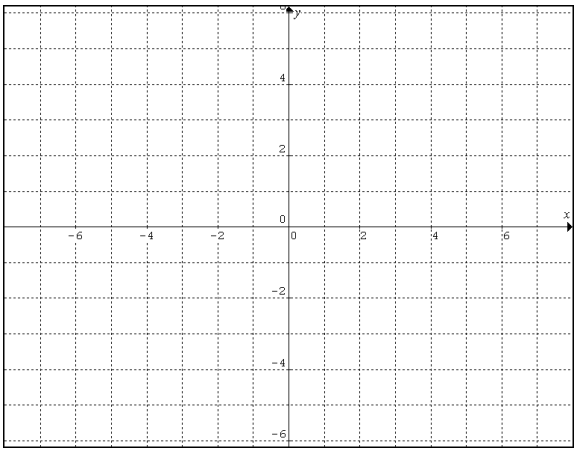
Quadratic Functions in Standard Form

$$y = ax^2 + bx + c$$

4. $y = -x^2 + 2x + 8$

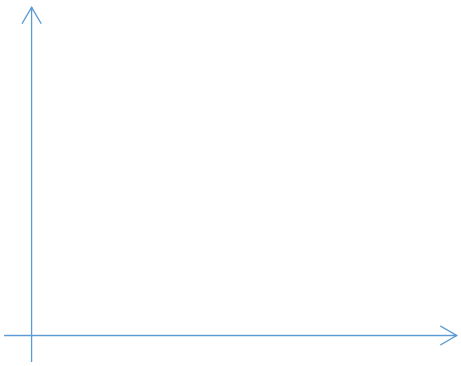
Coordinates of the vertex	
Axis of symmetry	
Opening	
Min/Max	
Range	
Domain	
y-intercept	



5. Synchronized divers perform matching dives from opposite sides of a platform that is 10 m high. Two divers reached their maximum height of 0.6 m above the platform after 0.35 s.

a) What are the coordinates of the vertex? What does the vertex represent?

b) Sketch the graph.



c) Determine the domain and the range in terms of the problem.

d) How long did it take them to reach the water?

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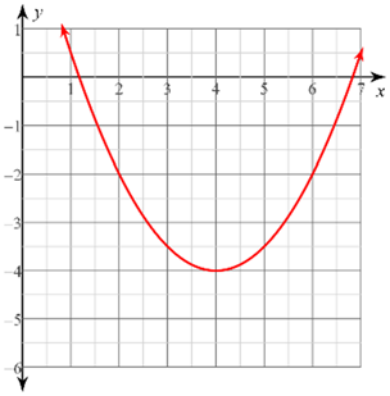
6. Write the following quadratic function in **Standard Form** ($y = ax^2 + bx + c$):

a) $y = (x+3)^2 + 7$ b) $y = 2(x-4)^2 - 30$ c) $y = -\frac{1}{2}(x-6)^2 + 15$

7. Write the following quadratic function in **Vertex Form** ($y = a(x-p)^2 + q$):

a) $y = x^2 + 2x + 8$ b) $y = \frac{1}{2}x^2 - 4x + 9$ c) $y = 4x^2 + 7x - 15$

8. Determine a quadratic function in standard form.



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9. Solve by factoring:

a) $y = x^2 + 2x + 8$ b) $y = 9x^2 - 64$ c) $24 = 3x^2 + 6x$

10. Solve by quadratic formula:

a) $y = 2x^2 + 8x - 5$ b) $7x = 6x^2 - 3$ c) $10x - 3 = 5x^2$