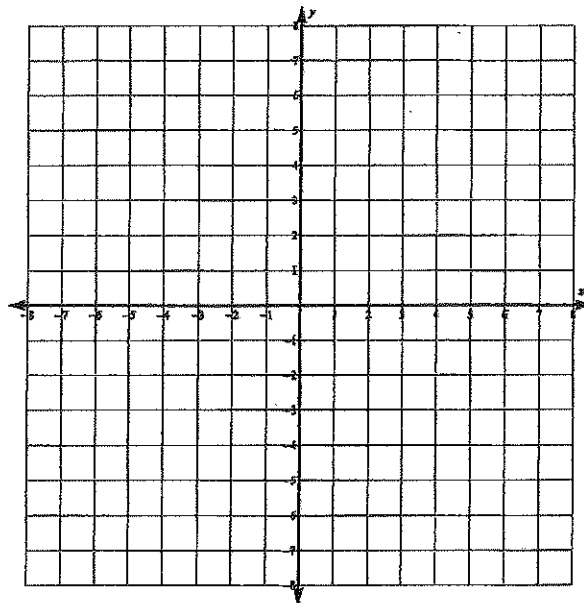


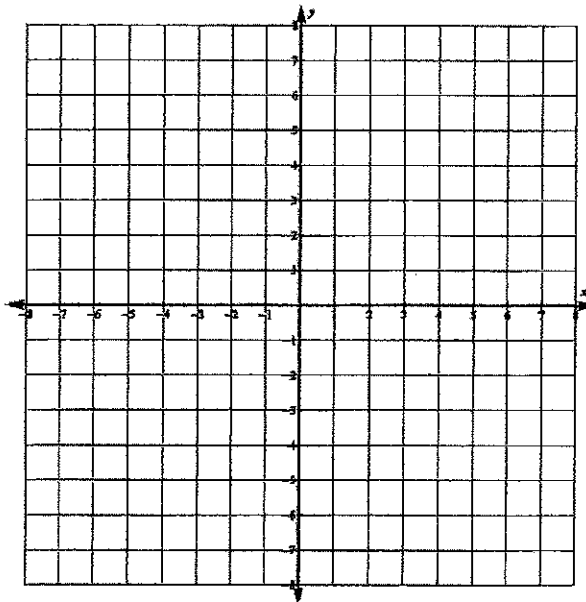
Quadratic Functions and Equations
Quiz 4.1-4.3 Review

1. $y = x^2 - 6x + 9$



Characteristics	
Axis of Symmetry	
Vertex	
y-intercept	
Point symmetric to y-intercept	
Direction it opens	
Domain	
Range	

2. $y = -x^2 - 4x + 3$



Characteristics	
Axis of Symmetry	
Vertex	
y-intercept	
Point symmetric to y-intercept	
x-intercept(s)	
Domain	
Range	

Find the solution to the following equations by factoring.

3. $x^2 - 10x - 39 = 0$

4. $2x^2 - 6x - 56 = 0$

5. $x^2 - 81 = 0$

6. Find the zeros of the equation $2x^2 - 15x = 8$

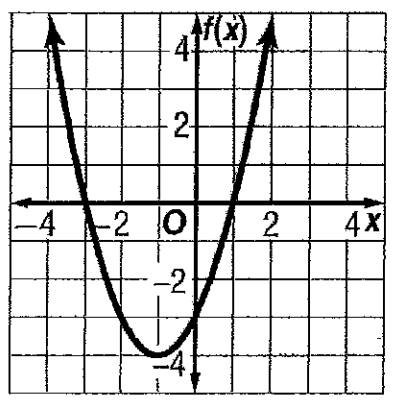
7. You are playing a lawn version of tic-tac-toe in which you toss bean bags onto a large board. One of your tosses can be modeled by the function $y = -0.12x^2 + 1.2x + 2$, where x is the bean bag's horizontal position (in feet) and y is the corresponding height (in feet). What is the bean bag's maximum height?

8. An equation $y = 2(x - 3)(x + 4)$ is given in Intercept Form, which of the following is a representation of the same equation in Standard Form.

9. The height, h (in feet) of a volleyball t seconds after it is hit can be modeled by $h = -16t^2 + 48t + 4$. What is the volleyball's maximum height.

10. Gregg is diving into a pool from a spring board 4 feet above the water. This jump can be modeled by the equation $h(t) = -2t^2 + 4t + 3$, where h is the height above the water and t is time in seconds. The point where Gregg enters the water can be represented by what?

11. Which function is graphed?

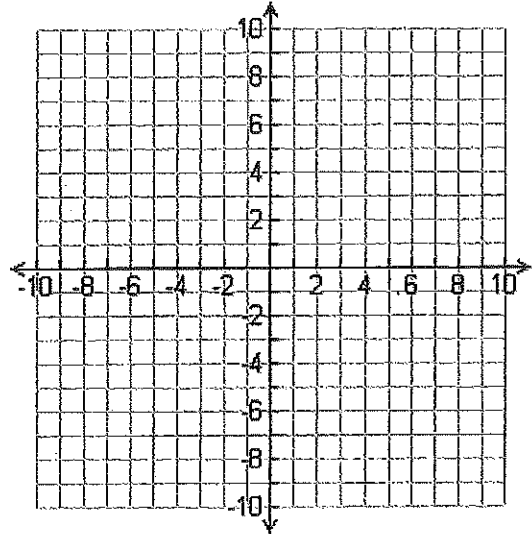


What are the zeros of the function?

12. A juggler tosses a ball into the air modeled by the equation $h = -16t^2 + 48t + 4$.

What is the maximum height that the ball reaches? When does this occur?

If the juggler misses the ball at what time will it hit the floor? Round the time to 2 decimal places.



What does the floor represent in this problem modeled by the graph?

13. By the Zero Product Property, if $(2x - 1)(x - 5) = 0$, then what does x equal?

14. Write a quadratic equation with 7 and $\frac{2}{5}$ as its roots.

Write the equation in the form $ax^2 + bx + c = 0$, where a , b , and c are integers.

15. Solve $x^2 + 6x = -6$. If exact roots cannot be found, state the consecutive integers between which the roots are located.

16. Determine whether $f(x) = \frac{1}{2}x^2 - x - 9$ has a maximum or a minimum value and find that value.

For Questions 17 and 18, solve each equation by factoring.

17. $x^2 - 7x = 18$

18. $4x^2 = x$