Review for Quadratics Test   Name _____ Period _____
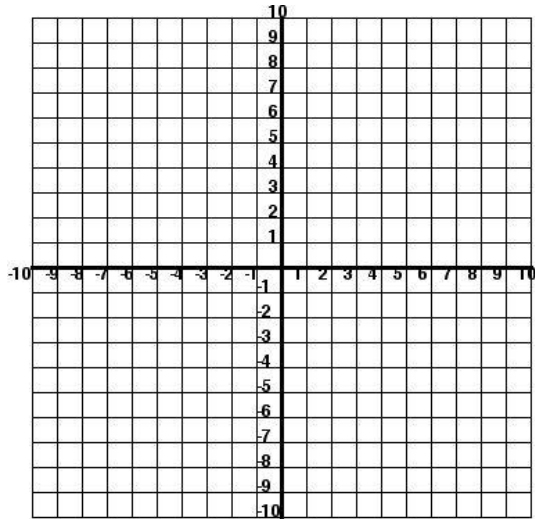
Graph each function. Be sure it goes through the vertex, x-intercepts, and y-intercept.
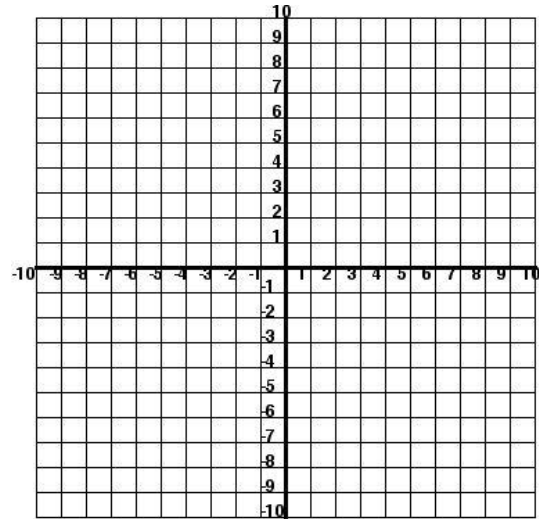
1. $f(x) = -4x^2 - 12x + 16$

x- intercepts: _____, _____
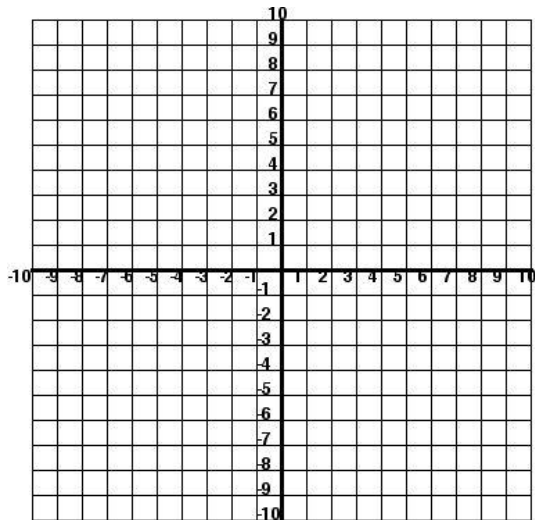y-intercept: _____
Vertex: _____

2. $f(x) = 6x^2 + 36x$

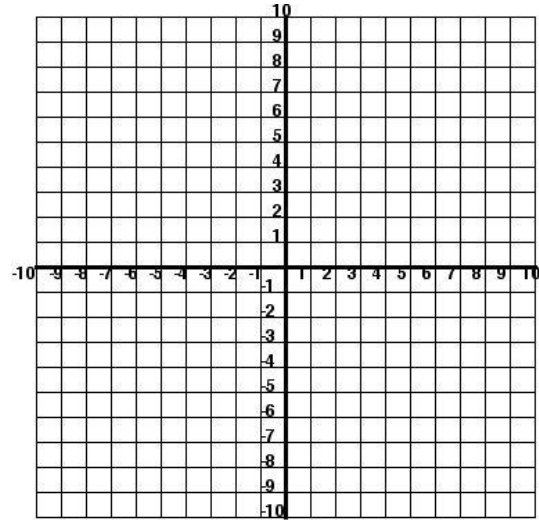x- intercepts: _____, _____
y-intercept: _____
Vertex: _____

3. $f(x) = 9x^2 - 5x + 3$

x- intercepts: _____, _____
y-intercept: _____
Vertex: _____

4. $f(x) = \dfrac{1}{7}x^2 + 2x + 3$

x- intercepts: _____, _____
y-intercept: _____
Vertex: _____

Write the equation of the parabola in standard form and then identify the vertex.

5. $f(x) = 3x^2 - 18x + 12$

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

Find the inverse of each function	
7. $f(x) = 6 - 2x$	8. $f(x) = \sqrt{x - 5}$
9. $f(x) = \dfrac{3x - 4}{x + 7}$	10. $f(x) = x^2 - 3$

Determine if the functions are inverses.	
10. $f(x) = 4x + 5$ $\qquad g(x) = \dfrac{x - 5}{4}$	11. $f(x) = \dfrac{4 - x}{2}$ $\qquad g(x) = 8 + 2x$

How can you determine if a function is a one-to-one function?

12. Use the functions f(x) and g(x) to answer the following questions

f(x)   *g(x)*

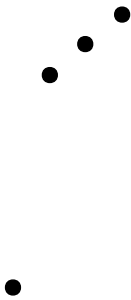| a) f(3) =	b) g(-4) =	c) (f + g)(2) =	d) (f - g)(-4) =
e) (fg)(-2) =	f) (f/g)(-3) =	g) f(g(1)) =	h) g(f(1)) =

Determine two functions $f(x)$ and $g(x)$ such that $h(x) = f(g(x))$.

13. $h(x) = \sqrt{2x}$

14. $h(x) = 4\left(\dfrac{1}{2x}\right)^2 + 8\left(\dfrac{1}{2x}\right) - 5$

15. Given the graph of f(x), graph the inverse function f⁻¹(x).

16. A ball thrown straight up, from 3 meters above the ground, with a velocity of 14 m/s has a path that follows the equation:
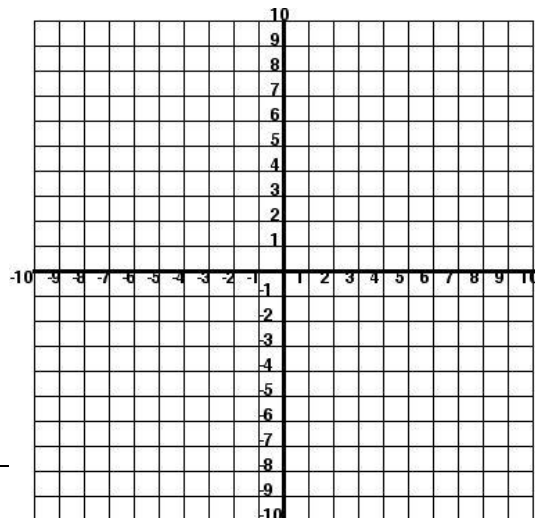$h(t) = -4.9t^2 + 14t + 3$
A. When does the ball hit the ground?

B. What is the maximum height?

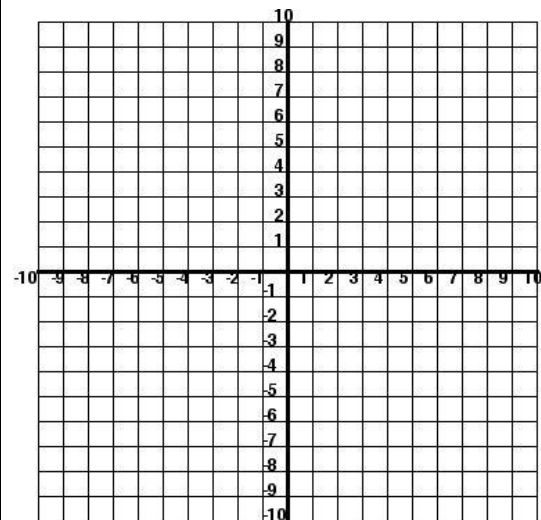Graph each piecewise function and state if the function is continuous.

17.
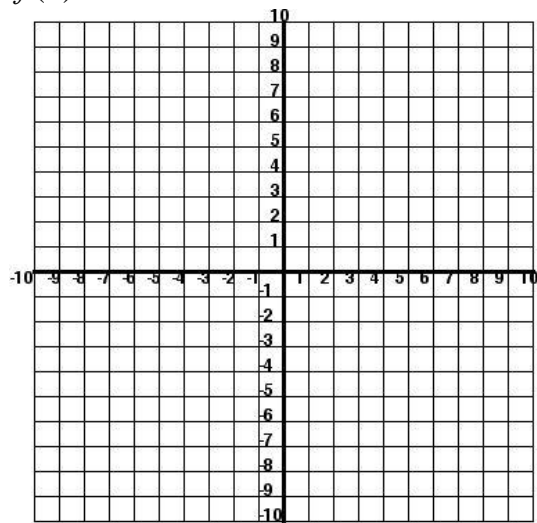$$f(x) = \begin{cases} x^2 & x \le 1 \\ 3 & 1 < x \le 2 \\ \dfrac{2}{3}x + 1 & x > 2 \end{cases}$$

18.
$$f(x) = \begin{cases} x + 2 & x \pounds -1 \\ 1 & -1 < x \pounds 1 \\ 2x - 1 & x > 1 \end{cases}$$

Graph Each Function. Be sure there are whole number points clearly marked that show the overall shape of the graph. State any shifts or reflections relative to the parent function.
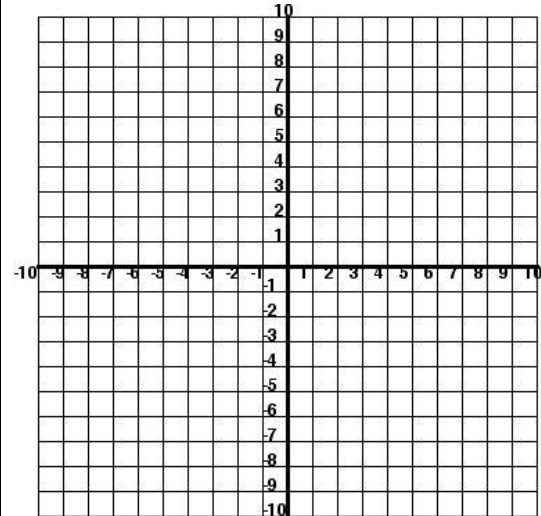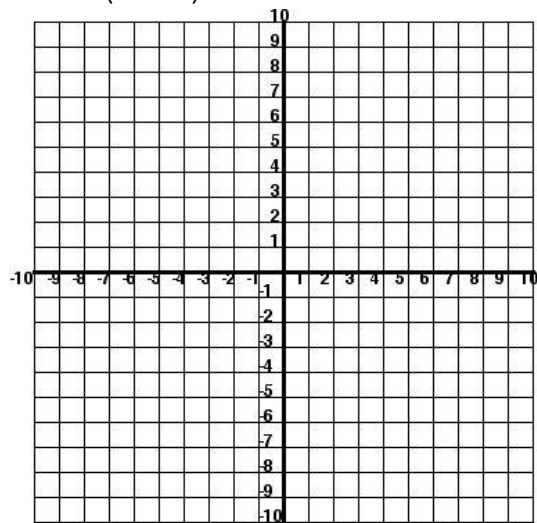
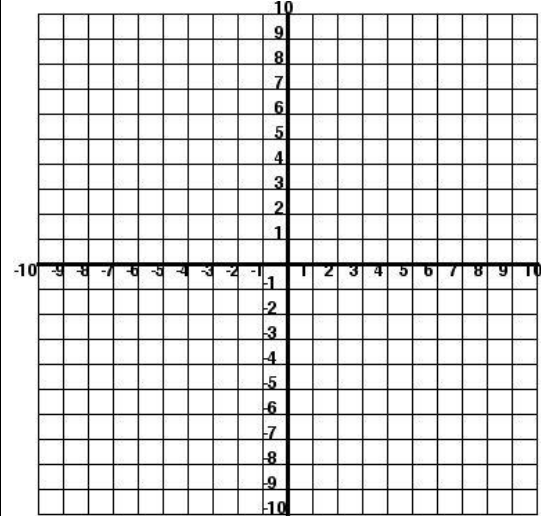| 19.	20.
$f(x) = \sqrt{x+2} - 1$	$f(x) = -(x+3)^2 - 2$

21.	22.
$f(x) = (-x - 5)^3 + 2$	$f(x) = -\sqrt{-x + 2} + 2$

| 23. A rock thrown off the San Francisco bridge at a velocity of 24 ft/s followed the given path:

$h(t) = -16t^2 + 24t + 526$

A. How long did it take the rock to hit the water?

B. How tall was the bridge? | Study the word problems #1-6 from class on Wednesday before Thanksgiving break. |