Quadratic Functions (Chapter 5: 5.5 – 5.9) Review Worksheet

Name:_____

Directions: Simplify each imaginary number.

1. $\sqrt{-36}$
2. $5\sqrt{-108}$
3. $-\frac{1}{2}\sqrt{-288}$

Directions: Add or subtract each set of complex numbers.

4. $(7-3i)+(2+5i)$
5. $(-2-4i)-(3-6i)$
6. $(-13+i)-(5+8i)$

Directions: Multiply or divide each set of complex numbers. **Show all work.**

7. $(5-2i)(4+3i)$
8. $(7-3i)(-3+2i)$
9. $(8+3i)^2$
10. $(5-4i)(5+4i)$
11. $\frac{3-2i}{-4+i}$
12. $\frac{4+3i}{2-5i}$
13. $\frac{-1+5i}{4+3i}$
14. $\frac{2-3i}{-2+i}$

Directions: Find the roots of each quadratic function by using the method of your choice. **Show all work.**

15. $f(x) = x^2 + 6x - 16$

16. $f(x) = x^2 - 4x + 11$

17. $f(x) = 2x^2 + 4x - 96$

18. $f(x) = 3x^2 - 75$

19. $f(x) = x^2 - 10x - 32$

20. $f(x) = 5x^2 - 4x - 11$

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

22. $f(x) = 4x^2 + 12x + 21$

Directions: Solve each word problem. Round all decimals to the nearest hundredth. **Show all work.** Answer the question in a complete sentence.

Use the formula below to help you set up the equations.

$$h(t) = -\frac{1}{2}gt^2 + v_i t + h_i$$

$h(t)$ = height of object at t seconds

g = gravity (9.8 meters/sec^2) (32 feet/sec^2)

t = time (in seconds)

v_i = initial velocity

h_i = initial height of object

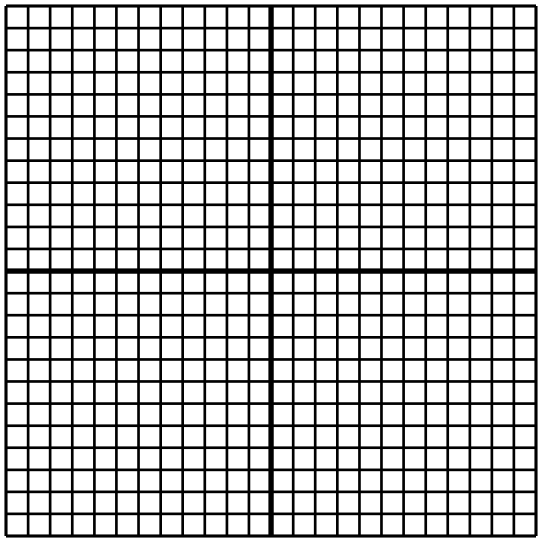
23. A ball was thrown up with an initial vertical velocity of 30 feet per second with an initial height of 5 feet. When will it hit the ground?

24. A soccer ball on the ground is kicked with an upward velocity of 14 meters per second. When will it hit the ground?

25. A ball was thrown up with a vertical rate of 41.4 feet per second with an initial height of 5.5 feet. When will it be 25 feet above the ground?

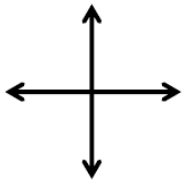
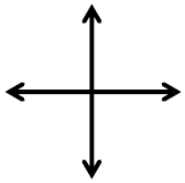
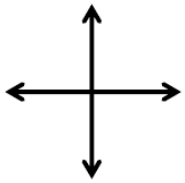
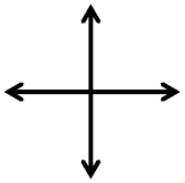
Directions: Find the intersection of each pair of quadratic functions and linear functions by graphing.

26. $f(x) = (x+5)^2 - 3$ and $g(x) = -2x - 10$



Directions: Find the intersection of each pair of quadratic functions and linear functions algebraically. **Show all work.**

27. $f(x) = x^2 - 8x + 9$ and $g(x) = -2x + 4$

PARENT FUNCTION	**CONSTANT**	**LINEAR**	**ABSOLUTE VALUE**	**QUADRATIC**
EQUATION (FUNCTION)				
GRAPH				
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