

Secondary Math III
Quadratics and Complex Numbers
Assignment 2.3

Carnegie Page 124 problem 1

Name _____

Period _____

Solve $f(x) = 0$ to find the real or imaginary zeros of each function.

1. $f(x) = x^2 - 25$

2. $g(x) = x^2 + 16$

3. $k(x) = x^2 - 5x - 14$

4. $v(x) = x^2 + 8x + 17$

5. $m(x) = x^2 + 6x + 10$

6. $f(x) = x^2 - 12x + 34$

7. $l(x) = (x + 7)^2 + 16$

8. $y = 2(x + 8)^2 + 50$

For problems 9-10, round answers to the nearest tenth.

9. Brittany is standing near the edge of a cliff 100 feet above a lake. She throws a rock upward with an initial speed of 32 feet per second. The height of the rock above the lake is described by $h(t) = -16t^2 + 32t + 100$ where h is the height in feet and t is the time in seconds. How many seconds after Brittany's throw will the rock hit the lake?

10. A soccer ball is kicked from the ground. The height of the soccer ball above the ground is given by $h(x) = -0.0128x^2 + x$ where x is the horizontal distance the ball travels. What is the horizontal distance traveled by the ball when it hits the ground?

Review:

Calculate each power of i without a calculator.

11. i^9

12. i^{13}

13. i^{50}

14. i^{28}

Identify and state what form the following quadratic functions are in. Then change it into standard form.

15. $f(x) = (x - 2)(x + 7)$

16. $g(x) = 4(x - 3)^2 + 2$

17. $h(x) = 3x^2 + \frac{4}{5}x - 6$

Form: _____
Standard Form:

Form: _____
Standard Form:

Form: _____
Standard Form:

Add, subtract and/or multiply the following expressions. Write final answer in standard form: $a + bi$

18. $(5 + 4i) - (8 - 3i)$

19. $(7 + 2yi)(9 - yi)$

20. $2 + 4i(10 - 5i) - 3i$