Algebra 2 - Chapter 5 Practice Test

1. Solve: $4x^2 + 16 = 0$

2. What are the zeros of the function $y = -2x^2 + 400$?

3. Simplify: $(-6 - 2i) - (-5 - 5i)$

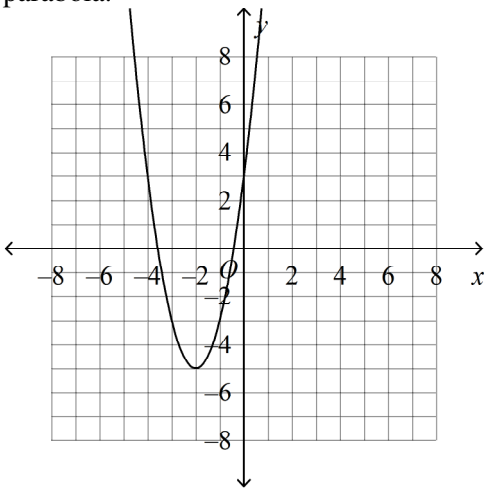
4. Find the z value for the solution to the following system: $\begin{cases} 2x - 2y + z = 5 \\ x - y - z = 1 \\ -x + 3y + 2z = -6 \end{cases}$

5. What is an equivalent form of $\frac{3}{5 - 2i}$?

6. Solve: $-5x^2 + 3x = 5$

7. What is the equation of a parabola that is translated up 2 and 3 to the left from the graph of the parabola $y = (x + 3)^2 + 1$?

8. Use the vertex form to write the equation of the parabola.



9. Which is a factor for the following quadratic? $x^2 - 6x - 16$

10. Which is the graph of $y = -x^2 + 4x - 3$?

11. Find the missing value to complete the square. $x^2 + 14x + \_\_\_\_$

12. Simplify: $(6 + i)(-1 - 3i)$

13. Solve: $x^2 + 10x + 25 = 49$

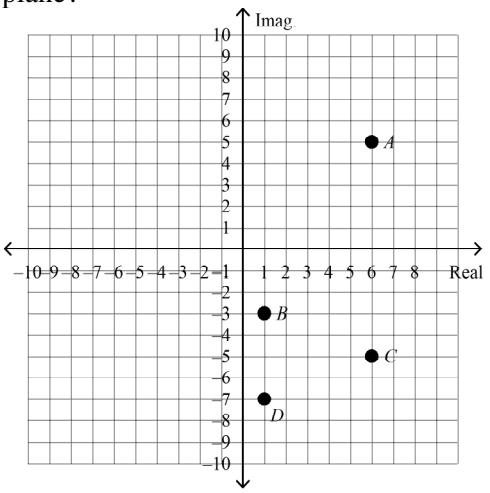
14. Solve: $-5x^2 - 9x + 4 = 0$

15. At the local pet store, clown fish cost $4 each and gold fish cost $2 each. If Sameer bought 12 fish for a total cost of $30, not including tax, how many clown fish did he buy?

16. Which coordinate pair is a solution: $\begin{cases} y < -x + 2 \\ -x - 2y \geq 4 \end{cases}$

    a. (0, 2)
    b. (-3, 2)
    c. (-5, -1)
    d. (3, 8)

17. Which point shows the location of 1 - 3i on the plane?



18. Factor Completely: $75x^2 - 3$

19. Solve: $x^2 + 16x + 54 = 0$

20. Which is a factor for the following quadratic?
$3x^2 + 10x + 8$

21. A rectangle has an area of $x^2 - 5x - 36$. What are the length and the width of the rectangle?

22. Solve: $5x^2 + 46x - 40 = 0$

23. Factor: $16x^2 - 9$

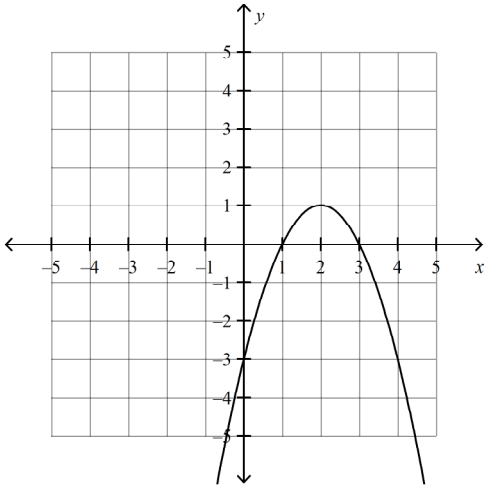
24. Factor Completely: $81x^2 - 36x + 16$

25. What is the maximum value of the function $y = -2x^2 + 4x - 10$?

26. **<u>This question is extra credit on the test.</u>**
How many roots does the following function have?
$y = 9x^2 + 6x + 1$

27. **<u>This question is extra credit on the test.</u>**
A ball went through the air and created the equation of a parabola: $h = 14 + 12d - 2d^2$ h is the height of the ball. d is the distance it traveled.
1. At what height was the ball released?
2. How far did the ball go?
3. How high did the ball go?

Algebra 2 - Chapter 5 Practice Test
Answer Section

1. $-2i, 2i$
2. $-10\sqrt{2}$ and $10\sqrt{2}$
3. $-1 + 3i$
4. 1
5. $\dfrac{15 + 6i}{29}$
6. $\dfrac{3}{10} \pm \dfrac{\sqrt{91}}{10}\, i$
7. $y = (x + 6)^2 + 3$
8. $y = 2(x + 2)^2 - 5$
9. $x - 8$
10. 

11. 49
12. $-3 - 19i$
13. 2, –12
14. $-\dfrac{9}{10} \pm \dfrac{\sqrt{161}}{10}$
15. 3 clown fish
16. C
17. point *B*
18. $3(5x + 1)(5x - 1)$
19. $-8 \pm \sqrt{10}$
20. $3x + 4$
21. $x + 4$ and $x - 9$
22. $-10, \dfrac{4}{5}$
23. $(4x + 3)(4x - 3)$
24. Not Factorable

25. -8
26. one root
27. 1) 14 units
    2) 7 units
    3) 32 units