

For #1-6, simplify the following square roots. Leave your answer in simplest radical form. (No decimals)

1.  $\sqrt{-48}$

2.  $-3\sqrt{-49}$

3.  $-\sqrt{-175}$

4.  $\frac{3}{2}\sqrt{-12}$

5.  $\sqrt{-224}$

6.  $-\frac{1}{4}\sqrt{-8}$

For #7-9, solve the quadratic inequality and write the result in interval notation.

7.  $x^2 - 3x - 4 < 24$

8.  $3x^2 - 21x \geq 0$

9.  $x^2 + 8x + 12 > 0$

10.  $2x^2 + 12x + 10 \leq 0$

For #10-15, find the discriminant of the functions. Identify how many and what type of solutions. Then solve using the quadratic formula.

10.  $x^2 - 4x + 5 = 0$

11.  $x^2 + 6x - 13 = 0$

Disc: \_\_\_\_\_

Type of Sol: \_\_\_\_\_

Solutions: \_\_\_\_\_

Disc: \_\_\_\_\_

Type of Sol: \_\_\_\_\_

Solutions: \_\_\_\_\_

12.  $x^2 + 6x + 5 = 0$

13.  $x^2 + 4x + 2 = 0$

Disc: \_\_\_\_\_  
Type of Sol: \_\_\_\_\_  
Solutions: \_\_\_\_\_

Disc: \_\_\_\_\_  
Type of Sol: \_\_\_\_\_  
Solutions: \_\_\_\_\_

14.  $x^2 - 5x + 8 = 0$

15.  $x^2 - 3x + 10 = 0$

Disc: \_\_\_\_\_  
Type of Sol: \_\_\_\_\_  
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For #16-27, solve using any method.

16.  $x^2 - 7x - 3 = 0$

17.  $x^2 + 5x - 6 = 0$

18.  $x^2 - 6x = 0$

19.  $2x^2 - 7x + 3 = 0$

$$20. 3x^2 - 5x + 6 = -4$$

$$21. x^2 + 11x = 3x - 10$$

$$22. 14 - 3x^2 = 2x$$

$$23. 7 - 8x^2 = 6x + 16$$

$$24. 5x^2 - 125 = 0$$

$$25. 2(x + 1)^2 - 3 = 7$$

$$26. x^2 + 24x + 75 = -5$$

$$27. 3x^2 - 12x + 15 = -15$$