1. Evaluate the following expression given \( a=4, \) \( b=2, \) and \( c=(-3). \)
\[
\frac{a}{b} + b + ac - c
\]

Simplify each expression.

2. \(-6 - 4x + 9\)
3. \(4d(2d-8)\)
4. \(n-3n(7+n)\)
5. \(5(y-4) - 2(y-6)\)

Find each product.

6. \((-4x - 3)(3x + 5)\)
7. \((-k - 2)(-6k - 7)\)
8. \((h + 7)(4h - 5)\)
9. \((11d - 11)(2d + 3)\)
10. \((5w + 5x)(5w - 5x)\)
11. \((3m - n)^2\)

Factor each product completely.

12. \(p^2 + 12p + 27\)
13. \(x^2 - 15x + 56\)
14. \(3m^2 - 7m - 6\)
15. \(12k^2 + 24k - 15\)
16. \(9x^2 - 25x\)
17. \(4x^2 - 12x + 36\)
18. \(8v^2 + 32v\)
19. \(8d^2 - 98\)

Simplify.

20. \(\sqrt{125}\)
21. \(\sqrt{147}\)
22. \(\sqrt{216v^2}\)
23. \(\sqrt{80k^5}\)
24. \(\sqrt{196a^4b^3}\)
25. \(\sqrt{28x^6y}\)
Solve each proportion.

26. \( \frac{3}{5} = \frac{m}{8} \)  
27. \( \frac{r}{9} = \frac{2}{4} \)

Solve each equation.

28. \( -8 = -(x + 4) \)  
29. \( -5(1 - 5x) + 5( -8x - 2) = -4x - 8x \)
30. \( \frac{2}{5}m - \frac{2}{3}m = \frac{4}{15} \)  
31. \( \frac{1}{4}x - \frac{3}{2} \cdot \frac{1}{3}x = \frac{5}{12} \)

Solve each inequality and graph its solution.

32. \( -8(1 + 6v) - 1 \leq -9 \)  
33. \( -(2 + 2n) - 2 > 6 \)

Solve each equation by factoring.

34. \( 4x^2 + 64 = -32x \)  
35. \( 4n^2 + 10n = 6 \)

Solve by using the quadratic formula.

36. \( 2x^2 - 5 = 3x \)  
37. \( 5m^2 + 9m = -4 \)

Find the distance and midpoint between the pair of points.

38. \((5, -8) ( -4, -3 )\)  
39. \(( -10, -4 ) ( 7 , -10 )\)

Sketch the graph of the line.

40. \( y = \frac{2}{3}x - 4 \)  
41. \( 5x + 4y = -20 \)

Sketch the graph of the linear inequality.

42. \( y \geq \frac{1}{3}x - 5 \)  
43. \( 3x + 9y < 18 \)
Sketch the solution to the system of inequalities.

44. \( y \leq \frac{1}{2}x + 2 \)
    \( y > 3x - 3 \)

Solve each system by substitution.

45. \( 3m + n = 5 \)
    \( 5m - 4n = -3 \)

46. \( -7x - 2y = -13 \)
    \( x - 2y = 11 \)

Solve each system by elimination.

47. \( -4x + 9y = 9 \)
    \( X - 3y = -6 \)

48. \( -6x + 6y = 6 \)
    \( -6x + 3y = 12 \)