

PRACTICE FINAL**Simplify each expression.**

1. $9 \div 3 + 4^2 \cdot 2 - 10$

2. $24 - 2(3 - 9)^2 - 3^2$

3. $|9 - 16| - |-8|$

4. $-|-17| + |-16| + |24|$

Evaluate the expressions for the given values of x and y.

5. $5xy - x^2$; $x = -4$ and $y = -2$

6. $x^2 - 2xy + 3y^2$; $x = -2$ and $y = -1$

Solve each equation.

7. $8 - 2(a + 1) = 9 + a$

8. $7(2x + 3) - 6x = 1 - 7x$

9. $\frac{1}{3}y - 2 = \frac{3}{4}y + 1$

10. $\frac{3}{7}x - 2 = 1 + 3x$

Solve each equation for the specified variable.

11. Solve for p : $6p - 5q = 3$

12. Solve for y : $3x + 4y = 7$

Solve each inequality.

13. $4x + 6 \leq 3(3x - 5)$

14. $24 - 5x > -3x + 18$

Solve each problem.

15. The perimeter of a rectangle is 28 feet. Find the length of the rectangle if the length is 4 feet less than two times the width.

16. The number of women attending a conference was three less than twice the number of men. If 51 people attended the workshop, how many were women?

17. Find the simple interest after 5 years on a \$1500 investment if the interest rate is 2.5%.

18. Find the simple interest if \$1200 is borrowed for 2 years at a rate of 6%.

Find the proportion that solves each problem.

19. Kevin can ride his bicycle 8 miles in 25 minutes. At this pace, how long will it take him to ride 20 miles?

20. If the average height of children weighing 75 lbs is 58 inches, what is the average height of children weighing 60 lbs?

Convert each measure.21. 95 kilometers to miles (1 km \approx 0.62 mi)22. 72 feet to meters (1 ft \approx 0.30 m)

Simplify each expression.

23. $(-2r^{-3}s^{-2}t)(5st^{-6})$

24. $(x^3y^5z^0)(x^{-4}y^2)$

25. $(a^{-7}b^2c^0)^3$

26. $(x^3y^{-2}z)^{-5}$

27. $\frac{x^2y^6z^3}{x^{11}yz^4}$

28. $\frac{x^6y^{-5}}{x^{-2}y^3}$

Write the number in scientific notation.

29. 0.0000415

Write the number in standard form.

30. 6.102×10^6

Add the polynomials.

31. $(2x^2 - 3x - 5) + (-8x^2 + 5x - 2)$

Subtract the polynomials.

32. $(x^2 + 2x - 5) - (6x^2 - 4x - 1)$

Multiply the polynomials.

33. $6x^3(3x^2 - 5)$

34. $-4x^2y(5x^3y^2 - 2x^2y + 3x)$

Multiply the polynomials.

35. $(3x - 2)(4x + 1)$

36. $(4x - 5y)^2$

37. $(2x - 7)(2x + 7)$

Factor each expression completely.

38. $5x^2y^3 - 15x^3y + 10xy^2$

39. $16x^4y^2 - 8x^3y^2 + 4x^2y^2$

40. $25x^2 - 16y^2$

41. $64a^4 - 9b^2$

42. $9y - 3x + 3y^2 - xy$

43. $ax - a + bx - b$

44. $4x^2 - 11x + 6$

45. $5x^2 - 13x - 6$

Solve each equation.

46. $3y^2 - 4y - 15 = 0$

47. $4a^2 - 9a + 5 = 0$

48. $x^2 + 7x - 60 = 0$

49. $x^2 - 2x - 48 = 0$

Simplify each expression.

50. $\frac{2x^2 - 7x - 4}{x^2 - 16}$

51. $\frac{x^2 - 4x + 3}{x^2 - 1}$

Simplify each expression. Assume the variable represents a non-negative number.

52. $\sqrt{60a^6}$

53. $\sqrt{144x^7y^4}$

Simplify each expression.

54. $\sqrt{3}(2\sqrt{3} - \sqrt{21})$

55. $\sqrt{48} + \sqrt{27}$

Find the x -intercept for the given line.

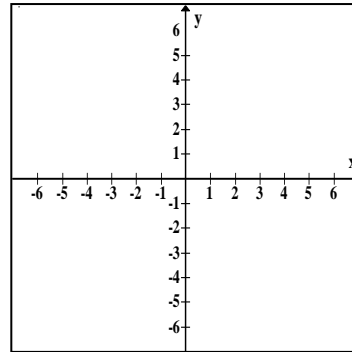
56. $2x + 5y = 15$

Find the y -intercept for the given line.

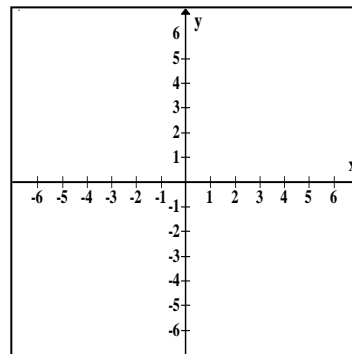
57. $x + 3y = 2$

Graph each linear equation.

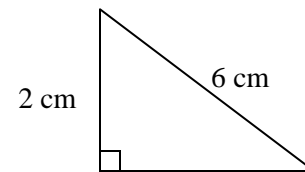
58. $y = -4x - 5$



59. $2x + y = 4$



60. Find the length of the unknown side of the right triangle. Give the exact answer.

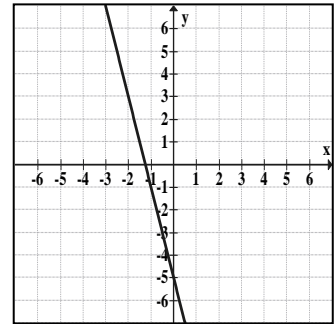


ANSWER KEY

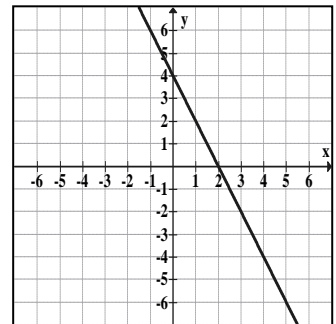
1. 25
2. -57
3. -1
4. 23
5. 24
6. 3
7. $a = -1$
8. $x = -\frac{4}{3}$
9. $y = -\frac{36}{5}$
10. $x = -\frac{7}{6}$
11. $p = \frac{5q+3}{6}$
12. $y = \frac{7-3x}{4}$
13. $x \geq \frac{21}{5}$
14. $x < 3$
15. 8 ft
16. 33 women
17. \$187.50
18. \$144.00
19. $\frac{8}{25} = \frac{20}{x}$
20. $\frac{75}{58} = \frac{60}{x}$
21. 58.9 miles
22. 21.6 meters
23. $-\frac{10}{r^3st^5}$
24. $\frac{y^7}{x}$

25. $\frac{b^6}{a^{21}}$
26. $\frac{y^{10}}{x^{15}z^5}$
28. $\frac{y^5}{x^9z}$
28. $\frac{x^8}{y^8}$
29. 4.15×10^{-5}
30. 6,102,000
31. $-6x^2 + 2x - 7$
32. $-5x^2 + 6x - 4$
33. $18x^5 - 30x^3$
34. $-20x^5y^3 + 8x^4y^2 - 12x^3y$
35. $12x^2 - 5x - 2$
36. $16x^2 - 40xy + 25y^2$
37. $4x^2 - 49$
38. $5xy(xy^2 - 3x^2 + 2y)$
39. $4x^2y^2(4x^2 - 2x + 1)$
40. $(5x - 4y)(5x + 4y)$
41. $(8a^2 + 3b)(8a^2 - 3b)$
42. $(3 + y)(3y - x)$
43. $(x - 1)(a + b)$
44. $(x - 2)(4x - 3)$
45. $(x - 3)(5x + 2)$
46. $y = -\frac{5}{3}, y = 3$
47. $a = \frac{5}{4}, a = 1$
48. $x = -12, x = 5$
49. $x = -6, x = 8$

50. $\frac{2x+1}{x+4}$
51. $\frac{x-3}{x+1}$
52. $2a^3\sqrt{15}$
53. $12x^3y^2\sqrt{x}$
54. $6 - 3\sqrt{7}$
55. $7\sqrt{3}$
56. $\left(\frac{15}{2}, 0\right)$
57. $\left(0, \frac{2}{3}\right)$
- 58.



59.



60. $4\sqrt{2}$ cm