

Use the appropriate mathematical operations to simplify the following expressions.

1. $(-2) + 4 - (-8)$

a. -6

b. 10

c. -10

d. 6

2. $4 + (-1) + (-10) - 5$

a. -12

b. 10

c. 12

d. -10

3. $\left(\frac{1}{3}\right)(-8)\left(\frac{2}{3}\right)(18)$

a. 16

b. 32

c. -144

d. -32

4. $(-4)\left(\frac{1}{2}\right)(-3)$

a. -6

b. -24

c. $-12\frac{1}{2}$

d. 6

5. $-48 \div (-3)$

a. 16

b. 12

c. -16

d. -12

6. $-86 \div 4$

a. 21.5

b. -21.2

c. -21.5

d. 21.5

7. $\left(-2\frac{1}{4}\right) + \left(4\frac{2}{3}\right)$

a. $2\frac{3}{7}$

b. $2\frac{11}{12}$

c. $6\frac{11}{12}$

d. $-2\frac{3}{7}$

8. $-7\frac{1}{3} + \left(-2\frac{3}{4}\right)$

a. $9\frac{2}{7}$

b. $-9\frac{13}{12}$

c. $-8\frac{1}{12}$

d. $-10\frac{1}{12}$

9. $5 - 3\frac{3}{8}$

a. $1\frac{5}{8}$

b. $2\frac{3}{8}$

c. $-2\frac{3}{8}$

d. $2\frac{5}{8}$

10. $5\frac{2}{5} - \left(-2\frac{1}{4}\right)$

a. $7\frac{3}{9}$

b. $7\frac{13}{20}$

c. $3\frac{3}{20}$

d. $-3\frac{1}{3}$

11. $\left(2\frac{5}{8}\right)\left(-1\frac{2}{3}\right) =$

a. $-2\frac{10}{24}$

b. $2\frac{5}{12}$

c. $4\frac{5}{8}$

d. $-4\frac{3}{8}$

12. $\left(2\frac{1}{2}\right)\left(-5\frac{1}{4}\right)$

a. $-10\frac{1}{8}$

b. $-13\frac{1}{8}$

c. $10\frac{1}{4}$

d. $-10\frac{3}{4}$

13. $3 \div 1\frac{7}{8}$

a. $5\frac{5}{8}$

b. $3\frac{8}{7}$

c. $\frac{5}{8}$

d. $1\frac{3}{5}$

14. $3\frac{1}{5} \div -6\frac{2}{3}$

a. $-\frac{12}{25}$

b. $-\frac{3}{64}$

c. $-\frac{1}{15}$

d. $-2\frac{3}{10}$

15. $2[3(5-2)+10]$

- a. 36 b. 28 c. 38 d. 26

16. $12 \div 6 \times 3^2$

- a. 18 b. 36 c. 27 d. 30

17. $\frac{14 \div 2 - 1}{9 + 7 \times 3}$

- a. $\frac{6}{48}$ b. $\frac{1}{8}$ c. $\frac{7}{24}$ d. $\frac{1}{5}$

Evaluate each expression for the given values.

18. $(3y - 2x)^2$ when $x = 3$ and $y = 4$

- a. 25 b. 36 c. -1 d. 1

19. $8 - (y - x)$ when $x = -2$ and $y = 5$

- a. 1 b. 5 c. 15 d. -5

20. $xy^2 - 4x + 2y$ when $x = 3$ and $y = 2$

- a. 31 b. 34 c. 10 d. 4

Write each phrase as a variable expression.

21. The quotient of 6 and a number

- a. $6n$ b. $\frac{6}{n}$ c. $n - 6$ d. $\frac{n}{6}$

22. Four less than twice a number

- a. $4 - 2x$ b. $4 < 2x$ c. $2x - 4$ d. $4 > 2x$

Simplify by combining like terms.

23. $4m + 3d^3 - 5m + d^3$

a. $9m + 4d^3$

b. $m + 4d^3$

c. $-m^2 + 4d^6$

d. $-m + 4d^3$

24. $2x(4x - 5)$

a. $6x - 10x$

b. $8x^2 - 10x$

c. $8x - 10$

d. $18x^2$

25. $3(x - 4y) + 2y - 5x$

a. $-2x - 10y$

b. $-12xy + 2y - 5x$

c. $2x - 10y$

d. $-xy + 2y - 5x$

Simplify

26. $|-12| - |-4|$

a. -16

b. 8

c. -8

d. 16

27. $|-3| - |-5| - |8|$

a. -16

b. -6

c. -10

d. 0

28. $3.25 + 2.3 + 6.91$

a. 10.39

b. 12.46

c. 9.39

d. 11.56

29. $3.25 \times .15$

a. $.4875$

b. 4.875

c. 3.825

d. $.3825$

30. $7.995 \div -3.9$

a. 2.50

b. -2.50

c. 2.05

d. -2.05

Solve the following equations.

31. $-14 + x = -7$

a. -21

b. 7

c. $\frac{1}{2}$

d. -7

32. $\frac{x}{3} = -24$

a. -8

b. -72

c. -21

d. 8

33. $\frac{x}{2} + 5 = 2$

a. -6

b. 14

c. -1

d. -4

34. $x - (-7) = 21$

a. 28

b. 3

c. -3

d. 14

35. $x - 2.3 = 3.95$

a. 6.25

b. 1.65

c. 3.72

d. 4.18

36. $\frac{12}{18} = \frac{z}{27}$

a. 9

b. 2

c. 18

d. 21

37. $\frac{25}{100} = \frac{7}{y}$

a. 4

b. 28

c. 8

d. 25

Compare the following quantities and select the correct sign.

38. $|8 - (-5)|$ _____ $|12 - 25|$

a. <

b. >

c. =

39. $\frac{2}{3}$ _____ $\frac{4}{7}$

a. <

b. >

c. =

40. -10 _____ -8

a. <

b. >

c. =

Write the following decimal as a percent.

41. .685

- a. .0685% b. 6.85% c. 68.5% d. .00685%

42. 7.25

- a. 72.5% b. 725% c. .725% d. 7.25%

Write the following percent as a reduced fraction.

43. 225%

- a. $2\frac{1}{4}$ b. $2\frac{1}{2}$ c. $22\frac{1}{20}$ d. $22\frac{1}{2}$

44. 8%

- a. $\frac{1}{8}$ b. $\frac{2}{25}$ c. $\frac{0.8}{10}$ d. $\frac{4}{5}$

Write the following numbers in scientific notation.

45. 0.0638

- a. 63.8×10^{-1} b. 6.38×10^{-2} c. 6.38×10^2 d. 6.38×10^1

46. 168,000

- a. 168×10^3 b. 16.8×10^4 c. 168×10^{-3} d. 1.68×10^5

Write the following numbers in standard notation.

47. 4.3×10^{-1}

- a. 43 b. 0.043 c. 0.0043 d. 0.43

48. 5.56×10^2

- a. 55.6 b. 556 c. 0.556 d. .0556

Find each square root

49. $\sqrt{64}$

- a. 32 b. 8 c. 16 d. 4

50. $-\sqrt{100}$

a. -10

b. -50

c. 10

d. 5

Find the slope between the given points. The formula for slope is $m = \frac{y_2 - y_1}{x_2 - x_1}$

51. (5,6) and (-2,3)

a. $\frac{-3}{7}$

b. $\frac{7}{-3}$

c. $\frac{3}{7}$

d. -1

52. (-2,1) and (3,-5)

a. $\frac{5}{6}$

b. 6

c. $-\frac{6}{5}$

d. $-\frac{5}{6}$

Solve the following word problems.

53. Jeremy saved \$185.92 in July and \$87.39 in August. Then he bought a new backpack for school. If the backpack cost \$123.97, how much of his savings from July and August was left?

a. \$149.36

b. \$273.31

c. \$222.50

d. \$149.34

54. Jane Hathaway has \$237 in her checking account. She went to an ATM machine and took \$157 out of her account. The next day she made a deposit of \$38. Three days after that she wrote a check for \$77 to pay her electric bill. How much did she have left in her account after paying the electric bill?

a. \$41

b. \$139

c. \$279

d. \$56

55. To make a t-shirt, $\frac{4}{5}$ yards of fabric is needed. How many t-shirts can be made from 48 yards of fabric?

a. 38.4

b. 23.6

c. 60

d. 86