

# Cumulative Practice

**Evaluate the numerical expression. (1.3, 2.1, 2.7)**

- |                             |                              |                               |
|-----------------------------|------------------------------|-------------------------------|
| 1. $5 + 3(18 \div 6)$       | 2. $3.6 \div (2 + 4) + 1.2$  | 3. $[2(9 - 5) + 1] \cdot 3^2$ |
| 4. $ 6 - 14  - 2.5(7)$      | 5. $2(3.5) -  13.2 - 7.21 $  | 6. $4(12.7 - 31.2) + 3.6$     |
| 7. $(20 - 3 + 7) \div (-8)$ | 8. $\frac{4(9 - 2)}{(7)(8)}$ | 9. $\frac{2^3 - 2(9)}{-5}$    |

**Evaluate the variable expression. (1.3, 2.5, 2.7)**

- |  |   |
|--|---|
| 10. $-20 - 4y$ when $y = -3$                         | 11. $r + 6(5 - r)$ when $r = 10$                                  |
| 12. $\frac{x - y}{3}$ when $x = 22$ and $y = 7$      | 13. $\frac{15x - 21}{y}$ when $x = 3$ and $y = 6$                 |
| 14. $\frac{10x^2 - 8}{y}$ when $x = -2$ and $y = 11$ | 15. $\frac{x^2y^2}{4x - 10}$ when $x = 10$ and $y = -\frac{1}{2}$ |

**Check whether the number is a solution of the equation or inequality. (1.4)**

- |                       |                       |                            |
|-----------------------|-----------------------|----------------------------|
| 16. $4 + 2x = 12$ ; 2 | 17. $6x - 5 = 13$ ; 3 | 18. $3y + 7 = 4y - 2$ ; 8  |
| 19. $x - 4 < 6$ ; 9   | 20. $5x + 3 > 8$ ; 1  | 21. $9 - x \leq x + 3$ ; 3 |

**Write the verbal phrase or sentence as an expression, an equation, or an inequality. (1.5)**

22. A number cubed minus eight
23. The sum of four times a number and seventeen
24. Four less than twice a number is equal to ten.
25. The product of negative three and a number is greater than twelve.
26. The quotient of twenty and a number is less than one.

**Perform the indicated matrix operation. (2.4)**

- |  |  |
|--|--|
| 27. $\begin{bmatrix} 8 & -2 \\ 1 & -5 \end{bmatrix} + \begin{bmatrix} -3 & 6 \\ -7 & 0 \end{bmatrix}$                        | 28. $\begin{bmatrix} -5 & 5 \\ -2 & -1 \\ 8 & 4 \end{bmatrix} - \begin{bmatrix} -2 & 0 \\ 4 & -5 \\ 1 & -10 \end{bmatrix}$ |
| 29. $\begin{bmatrix} 23 & -6 & 1 \\ -47 & 15 & 4 \end{bmatrix} + \begin{bmatrix} 3 & 20 & -7 \\ -7 & -18 & 31 \end{bmatrix}$ | 30. $[4 \quad -2 \quad -7 \quad 1] - [6 \quad -4 \quad -8 \quad -1]$   |

**Find the probability of choosing the indicated letter from a bag that contains the letters of the word. (2.8)**

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| 31. Letter: A<br>Word: MATHEMATICS  | 32. Letter: I<br>Word: DIAMETER   |
| 33. Letter: P<br>Word: PHILADELPHIA | 34. Letter: A<br>Word: ALEXANDRIA |

**Solve the equation. (3.1–3.4)**

35.  $x + 11 = 19$

36.  $-7 - x = -2$

37.  $9b = 135$

38.  $35 = 3c - 19$

39.  $\frac{p}{2} - 9 = -1$

40.  $4(2x - 9) = 6(10x - 6)$

41.  $3(q - 12) = 5q + 2$

42.  $-\frac{3}{4}(2x + 5) = 6$

43.  $9(2p + 1) - 3p = 4p - 6$

**Solve the equation. Round the result to the nearest hundredth. (3.6)**

44.  $-3.46y = -5.78$

45.  $4.17n + 3.29 = 2.74n$

46.  $4.2(0.3 + x) = 8.7$

47.  $23.5a + 12.5 = 5.2(9.3a - 4.8)$

**In Exercises 48–50, rewrite the equation so that  $x$  is a function of  $y$ . Then use the result to find  $x$  when  $y = -2, 0, 1.5$ , and  $3$ . (3.7)**

48.  $x + \frac{1}{2}y = -3$

49.  $2(3y - 1) = 4x$

50.  $-3(x + y) + 4 = 7y$

51.  **TEMPERATURE** Suppose the temperature outside is  $82^\circ\text{F}$ . What is the temperature in degrees Celsius? Use the formula  $C = \frac{5}{9}(F - 32)$ . (1.1)

52.  **SILVER PRODUCTION** The table shows the amount (in metric tons) of silver produced in the United States for different years. Make a line graph of the data. (1.6)

Year	1991	1992	1993	1994	1995	1996
Amount (metric tons)	1860	1800	1640	1480	1560	1570

► Source: U.S. Geological Survey

53.  **FUND RAISER** Your school band is planning to attend a competition. The total cost for the fifty band members to attend is \$750. Each band member will pay \$3 toward this cost and the rest of the money will be raised by selling wrapping paper. For each roll of wrapping paper sold, the band makes \$2. Write and solve an equation to find how many rolls the band members need to sell. (3.3)

54. **GEOMETRY CONNECTION** The volume of a circular cylinder with a radius of 1.5 inches is about 42.4 cubic inches. Find the cylinder's height. Round to the nearest tenth. (*Hint*: Volume of a circular cylinder =  $\pi r^2 h$ ) (3.7)

 **VACATION IN SWEDEN** In Exercises 55–57, use the following information. You are vacationing in Sweden and have taken \$620 to spend. The rate of currency exchange in Sweden is 7.827 kronor (plural of krona) per United States dollar. (3.8)

55. If you exchange  $\frac{3}{4}$  of the entire amount, how many kronor will you receive?

56. After your vacation, you have 1255 kronor left. If the exchange rate is the same, how many dollars will you get back?

57. If you exchanged the entire amount at the start of your vacation, how many kronor would you have received?