

Evaluating Algebraic Expressions

1. Substitute the given numbers for the variables
2. Evaluate the expression using the order of operations

ex: evaluate $x + 4y$ for
 $x = 4$ & $y = 6$

$$\begin{array}{l} 4 + 4(6) \\ 4 + 24 = \boxed{28} \end{array}$$

One-Step Addition & Subtraction Equations

- Addition Equations: Subtract the number being added to the variable from both sides of the equation

$$\begin{array}{l} \text{ex: } 4 + x = 18 \\ \hline \begin{array}{l} -4 \quad -4 \\ \hline x = 14 \end{array} \end{array}$$

- Subtraction Equations: Add the number being subtracted from the variable to both sides of the equation

$$\begin{array}{l} \text{ex: } 20 = a - 5 \\ \hline \begin{array}{l} +5 \quad +5 \\ \hline 25 = a \rightarrow \boxed{a = 25} \end{array} \end{array}$$

One-Step Multiplication & Division Equations

- Multiplication Equations: Divide both sides of the equation by the number next to the variable

$$\begin{array}{l} \text{ex: } 7b = 28 \\ \hline \begin{array}{l} \cancel{7} \quad \cancel{7} \\ \hline b = 4 \end{array} \end{array}$$

- Division Equations: Multiply both sides of the equation by the number under the variable

$$\begin{array}{l} \text{ex: } 5 \cdot \frac{n}{5} = 10 \cdot 5 \\ \hline \begin{array}{l} \cancel{5} \quad \cancel{5} \\ \hline n = 50 \end{array} \end{array}$$

Problem Solving

1. Read the problem. Identify the question that is being asked and the key information in the problem.
2. Plan how you are going to solve the problem and estimate the answer.
3. Solve the problem using the strategy of your choice.
4. Check your answer. Make sure your answer is reasonable and compare it to your estimate. Label your answer with appropriate units.

Evaluate each expression for $a = 5$, $b = 12$, $c = 10$, & $d = 2$.

71. $2b - a$	72. $d(ab - c)$	73. $3 + \frac{b}{d}$
74. $\frac{4a}{b + 4d}$	75. $2a^2 - c$	76. $b - c + d$

Solve each one-step equation.

77. $g + 3 = 17$	78. $r - 6 = 7$	79. $6b = 18$	80. $\frac{h}{9} = 3$
81. $5 = f - 8$	82. $48 = 12b$	83. $a + 24 = 83$	84. $17 + x = 23$
85. $10 = \frac{m}{5}$	86. $86.5 = f - 7.63$	87. $\frac{n}{6} = 11$	88. $\frac{3}{4}h = 12$

Solve each word problem using the method of your choice.

89. A fencing company charges \$22 per foot to install a wood fence. How much will it cost to install a wood fence around a rectangular pool area that is 20 feet wide and 38 feet long?

90. A 6 inch-tall plant grew $\frac{3}{4}$ of an inch one week and twice as much the following week. How tall is the plant now?

91. Jack can read 45 pages of his book in one and a half hours. At that rate, how long will it take him to read the entire 300-page book?

92. Brian ordered 3 large cheese pizzas and a salad. The salad cost \$4.95. If he spent a total of \$47.60 including the \$5 tip, how much did each pizza cost? (Assume there is no tax).

93. A cookie recipe calls for $3\frac{1}{4}$ cups of flour. The recipe makes 3 dozen cookies. How much flour is needed to make 144 cookies?

94. Ella has a box of chocolate candies. She gives $\frac{1}{3}$ of the candies to her sister, 4 to her brother, and she eats the remaining 12 candies. How many chocolate candies were in the box originally?