

Variables and Expressions

Definitions

1. Variable - a letter that represents an unknown quantity in an algebraic expression or equation. Example: _____
2. Constant - a term in an expression that does not contain a variable. It is a number whose value does not change. Example: _____
3. Algebraic expression - an expression that contains variables, numbers, and at least one operation. Example: _____
4. Coefficient - the numerical factor of a multiplication expression that contains a variable. Example: _____
5. Equation - a mathematical sentence that contains an equal sign, =, stating that two quantities are equal. Example: _____

Fill in the table with examples of constants, coefficients, and variables. Then combine them to write an expression in the last column.

Constants	Coefficients	Variables	Expression

Evaluating Expressions

- 6) Evaluate $p + 4$, if $p = 9$ _____ and if $p = 12$ _____
- 7) Evaluate $n - 4$, if $n = 21$ _____ and if $n = 7$ _____
- 8) Evaluate $6b$, if $b = 5$ _____ and if $b = 9$ _____
- 9) Evaluate $\frac{44}{m}$, if $m = 11$ _____ and if $m = 2$ _____

Now try some more if $k = 4$

- 10) $k + 12$ _____ 11) $21 - k$ _____
- 12) $5k$ _____ 13) $\frac{k}{2}$ _____

Now try it with two variables.

14) $\frac{5}{d} + 2c$, when $d = 5$ and $c = 4$. _____

15) $\frac{8}{d} + 5c$, when $d = 2$ and $c = 6$. _____

16) $\frac{20}{d} + 2c$, when $d = 10$ and $c = 2$. _____

Evaluating expressions using order of operations.

Step 1: substitute values in place of the variables.

Step 2: Simplify using order of operations.

17) $h - 5 + h^2$, when $h = 7$ _____

18) $3p + 7^2(6 - p)$, when $p = 5$ _____

19) $(v - t) + 12 - 2t$, when $v = 5$ and $t = 3$ _____

20) $4s + (6 - b) \cdot s^2$, when $s = 3$ and $b = 5$ _____