Chapter 5

Practice 5-3B

Evaluating Algebraic Expressions

Evaluate each expression for the given value of the variable.

1. \(6x + 2y\) for \(x = 3\) and \(y = 10\)
   \[
   \frac{6(3) + 2(10)}{18 + 20}
   \]
   \[
   38
   \]

2. \(18 - ac\) for \(a = 13\) and \(c = 12\)
   \[
   \frac{18 - (13)(12)}{18 - 156}
   \]
   \[
   -138
   \]

3. \(\frac{1}{4}y\) for \(y = 24\)
   \[
   \frac{1}{4}(\frac{24}{1}) = 6
   \]

4. \(9z - 2b\) for \(b = 3\) and \(z = 6\)
   \[
   \frac{9(6) - 2(3)}{54 - 6}
   \]
   \[
   48
   \]

5. \(12 - 10n\) for \(n = 3\)
   \[
   \frac{12 - 10(3)}{12 - 30}
   \]
   \[
   -18
   \]

6. \(7.2m + 8k\) for \(k = 2\) and \(m = 3\)
   \[
   \frac{7.2(3) + 8(2)}{21.6 + 16}
   \]
   \[
   37.6
   \]

7. \(10(b - c)\) for \(b = 19\) and \(c = 12\)
   \[
   \frac{10(19-12)}{10(7)}
   \]
   \[
   70
   \]

8. \(n(18 - 5m)\) for \(m = 2\) and \(n = 4\)
   \[
   \frac{4(18 - 5(2))}{4(18 - 10)}
   \]
   \[
   4(8)
   \]
   \[
   32
   \]

Evaluate each expression for the given values of the variables.

9. \(xy + y\) for \(x = 7\) and \(y = 11\)
   \[
   \frac{7 \cdot 11 + 11}{7 \cdot 11}
   \]
   \[
   88
   \]

10. \(7j - 2k\) for \(j = 3\) and \(k = 8\)
    \[
    \frac{7 \cdot 3 - 2 \cdot 8}{21 - 16}
    \]
    \[
    5
    \]
11. $8a - 2b$ for $a = 5$ and $b = 12$
\[
8(5) - 2(12) \\
40 - 24 \\
16
\]

12. $6s + 9t$ for $s = 11$ and $t = 13$
\[
6(11) + 9(13) \\
66 + 117 \\
183
\]

13. $2(n - m)$ for $m = 6$ and $n = 5$
\[
2(5 - 6) \\
2(-1) \\
-2
\]

14. $w(21 - y)$ for $w = 3$ and $y = 6$
\[
3(21 - 6) \\
3(15) \\
45
\]

15. The expression $60m$ gives the number of seconds in $m$ minutes. Evaluate $60m$ for $m = 7$. How many seconds are there 7 minutes?
\[
60 \times 7 \\
420 \text{ seconds}
\]

16. Betsy has $n$ quarters. You can use the expression $0.25n$ to find the total value of her coins in dollars. What is the value of 18 quarters?
\[
0.25n \\
0.25(18) \\
$4.50
\]