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Lesson 1 - Algebraic Expressions

To evaluate an algebraic expression you replace each variable with its numerical value, then use the order of operations to simplify.

Example 1

Evaluate $6x - 7$ if $x = 8$.

$6x - 7 = 6(8) - 7$	Replace *x* with 8.
$= 48 - 7$	Use the order of operations.
$= 41$	Subtract 7 from 48.

Example 2

Evaluate $5m - 3n$ if $m = 6$ and $n = 5$.

$5m - 3n = 5(6) - 3(5)$	Replace *m* with 6 and *n* with 5.
$= 30 - 15$	Use the order of operations.
$= 15$	Subtract 15 from 30.

Example 3

Evaluate $\frac{ab}{3}$ if $a = 7$ and $b = 6$.

$\frac{ab}{3} = \frac{(7)(6)}{3}$	Replace *a* with 7 and *b* with 6.
$= \frac{42}{3}$	The fraction bar is like a grouping symbol.
$= 14$	Divide.

Example 4

Evaluate $x^3 + 4$ if $x = 3$.

$x^3 + 4 = 3^3 + 4$	Replace *x* with 3.
$= 27 + 4$	Use the order of operations.
$= 31$	Add 27 and 4.

BE SURE TO SHOW YOUR STEPS!

Exercises

Evaluate each expression if $a = 4$, $b = 2$, and $c = 7$.

1. $3ac$

2. $5b^3$

3. abc

7. $\frac{b^4}{4}$

8. $c - a$

9. $20 - bc$

13. $6a^2$

14. $6a - b$

15. $\frac{ab}{8}$

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Lesson 1 Skills Practice

Algebraic Expressions

Evaluate each expression if $w = 2$, $x = 3$, $y = 5$, and $z = 6$.

1. $2w$

2. $y + 5$

3. $9 - z$

7. y^2

8. $y - x$

9. $\frac{z}{2}$

Evaluate each expression if $m = 3$, $n = 7$, and $p = 9$.

10. $m + n$

11. $12 - 3m$

12. $5p$

16. $20 + 2n$

17. $20 - 2n$

18. $\frac{n}{7}$

22. $1.1 + n$

23. $p - 8.1$

24. $3.6m$

28. $\frac{m^2}{p}$

29. $\frac{2.5m + 2.5}{5}$

30. $\frac{(n + 2)^2}{3}$