

Lesson 1 Reteach

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 $x = 8$.

$$\begin{aligned} 6x - 7 &= 6(8) - 7 \\ &= 48 - 7 \\ &= 41 \end{aligned}$$

Replace x with 8.
Use the order of operations.
Subtract 7 from 48.

Example 2

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

$$\begin{aligned} 5m - 3n &= 5(6) - 3(5) \\ &= 30 - 15 \\ &= 15 \end{aligned}$$

Replace m with 6 and n with 5.
Use the order of operations.
Subtract 15 from 30.

Example 3

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

$$\begin{aligned} \frac{ab}{3} &= \frac{(7)(6)}{3} \\ &= \frac{42}{3} \\ &= 14 \end{aligned}$$

Replace a with 7 and b with 6.
The fraction bar is like a grouping symbol.
Divide.

Example 4

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

$$\begin{aligned} x^3 + 4 &= 3^3 + 4 \\ &= 27 + 4 \\ &= 31 \end{aligned}$$

Replace x with 3.
Use the order of operations.
Add 27 and 4.

Exercises

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

1. $3ac$

2. $5b^3$

3. abc

4. $5 + 6c$

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

6. $2a - 3b$

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

8. $c - a$

9. $20 - bc$

10. $2bc$

11. $ac - 3b$

12. $6a^2$

13. $7c$

14. $6a - b$

15. $ab - c$

Lesson 1 Homework Practice

Algebraic Expressions

Evaluate each expression if $r = 5$, $s = 2$, $t = 7$, and $u = 1$.

1. $s + 7$

2. $9 - u$

3. $3t + 1$

4. $5r - 4$

5. $t - s$

6. $u + r$

7. $11t - 7$

8. $6 + 3u$

9. $4r - 10s$

10. $3u^2$

11. $2t^2 - 18$

12. $r^2 + 8$

13. $\frac{s}{2}$

14. $\frac{30}{r}$

15. $\frac{(3 + u)^2}{8}$

Evaluate each expression if $a = 4.1$, $b = 5.7$, and $c = 0.3$.

16. $a + b - c$

17. $10 - (a + b)$

18. $b - c + 2$

19. **MOON** The expression $\frac{w}{6}$ gives the weight of an object on the Moon in pounds with a weight of w pounds on Earth. What is the weight of a space suit on the Moon if the space suit weighs 178.2 pounds on Earth?

20. Complete the table.

Pounds (p)	Ounces ($16p$)
1	16
2	32
3	
4	
5	