

# Lesson 1

## Variables and Algebraic Expressions

### Lesson

In algebra, we use letters called variables to represent unknown numbers. An algebraic expression is a combination of numbers, variables, and operations (like +, -, \*, /). For example,  $3x + 5$  means "three times some number, plus five."

To evaluate an expression, substitute the given value for the variable and compute.

### Example: Evaluate $2x + 7$ when $x = 4$

Step 1: Replace  $x$  with 4

$$2(4) + 7$$

Step 2: Multiply first

$$8 + 7$$

Step 3: Add

$$= 15$$

### Practice Problems

1) Evaluate  $3x + 2$  when  $x = 5$ .

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2) Evaluate  $4y - 9$  when  $y = 6$ .

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3) Evaluate  $x/2 + 10$  when  $x = 8$ .

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4) Evaluate  $5a - 2a + 7$  when  $a = 3$ .

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5) Evaluate  $2(n + 4)$  when  $n = 6$ .

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6) Write an algebraic expression: "seven more than twice a number."

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7) Write an algebraic expression: "a number decreased by four, then tripled."

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