Instruction

Problem-Based Task 1.3.2: Cabin Perimeter

Coaching Sample Responses

a. What is an expression for a in terms of x?

The length of a contains two labeled lengths: x and 6.

The sum of these two lengths, in feet, equals a: $(x + 6)$.

b. What is an expression for b in terms of x?

The length of b contains two labeled lengths: x and 4.

The sum of these two lengths, in feet, equals b: $(x + 4)$.

c. Using the formula for perimeter and the expressions for a and b, write a formula for the cabin's perimeter in terms of x.

Replace a and b in the perimeter formula with the expressions found in parts a and b.

$P = 2a + 2b$

$= 2(x + 6) + 2(x + 4)$

d. What is the simplified expression for the perimeter of the cabin in terms of x?

Apply the Distributive Property, then simplify by combining like terms.

$P = 2(x + 6) + 2(x + 4)$

$= 2x + 12 + 2(x + 4)$

$= 2x + 12 + 2x + 8$

$= 2x + 2x + 12 + 8$

$= 4x + 20$

The simplified expression for the perimeter of the cabin in terms of x is $(4x + 20)$ feet.

Recommended Closure Activity

Select one or more of the essential questions for a class discussion or as a journal entry prompt.