



7th Grade Lesson 41

- I can evaluate a formula by replacing letters in the formula with numbers and then simplifying.
- I can use the distributive property to simplify expressions.

The area (A) of a rectangle is related to the length (l) and width (w) of the rectangle by this formula:

$$A = lw$$

Find A in $A = lw$ when l is 8 ft and w is 4 ft.

$$A = 8 \text{ ft} \cdot 4 \text{ ft}$$

$$A = 32 \text{ ft}^2$$

Evaluate $2(l + w)$ when l is 8 cm and w is 4 cm

$$2(l + w)$$

$$2(8\text{ cm} + 4\text{ cm})$$

$$2(12\text{ cm})$$

$$24\text{ cm}$$

There are two formulas commonly used to relate the perimeter (p) of a rectangle to its length and width.

$$p = 2(l + w)$$

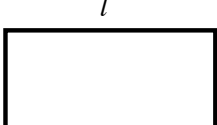
$$p = 2l + 2w$$


Diagram illustrating the application of two formulas to find the perimeter of a rectangle with length 30 in. and width 20 in.

Left side (using $p = 2(l + w)$):

$$p = 2(30\text{ in} + 20\text{ in})$$

$$p = 2(50\text{ in})$$

$$p = 100\text{ in}$$

Right side (using $p = 2l + 2w$):

$$p = 2(30\text{ in}) + 2(20\text{ in})$$

$$p = 60\text{ in} + 40\text{ in}$$

$$p = 100\text{ in}$$

A blue double-headed arrow connects the two formulas above the diagram.

THE DISTRIBUTIVE PROPERTY

Distribute the multiplication over the terms that are being added (or subtracted) within the parentheses.

$$a(b + c) = ab + ac$$



Show two ways to simplify: $6(20 + 5)$

$$\begin{aligned} 6(20+5) \\ 6(25) \\ 150 \end{aligned}$$

$$\begin{aligned} 6(20+5) \\ 6(20) + 6(5) \\ 120 + 30 \\ 150 \end{aligned}$$

Assignment:

Problem Set 41

A/B Optional: 4, 14, 29

