DIGITAL

NAME _____

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guided notes

Module 3   Solving Linear Equations of
One Variable
Lesson 6   Rewriting Formulas

Lesson Objectives

- Use formulas to find the value of one of the variables in the formula.
- Solve formulas for a given variable in the formula.
- Use formulas to solve real-world applications.

A formula is an _____ that states a _____

about related quantities. The related quantities are represented by the

_____ .

We use a formula to find the value of one of the _____ in the

formula. Finding the value of a variable in a formula sometimes requires

you to evaluate an _____ . If length = 3 ft

and width = 2 ft, then $A = lw = (3)(2) = $ _____ square feet.

Sometimes we need to solve an _____ . To find the width of

a rectangle whose length is 6 feet and whose area is 12 square feet, substitute

_____ for A and _____ for l in the formula

$A = lw$. Then solve the equation

$A = lw$

_____ = _____ w

_____ = _____

The width of the rectangle is _____ .

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To solve the formula $A = lw$ for width, use the rules of algebra. Undo the multiplication by dividing both sides of the equation by l.

$A = lw$

_____ = _____w

_____ = _____

For a rectangle, width $= \frac{\text{area}}{\text{length}}$.

1 ▶ Find the width of a rectangle that has an area of 24 square inches and a length of 8 inches.

$w = \frac{A}{l}$

$w =$ _____

$w =$ _____

The width of the rectangle is _____.

Another formula that can be rewritten and then used to find the width of a rectangle is $P =$ _____. To rewrite this formula, get _____ by itself on one side of the equation.

$P = 2l + 2w$

_____ = _____ First, subtract $2l$ from both sides of the equation.

_____ = _____ Then, divide both sides of the equation by 2.

For a rectangle, width $=$ _____.

2 ▶ Find the width of a rectangle that has a perimeter of 12 feet and a length

of 4 feet.

$w = \dfrac{P - 2l}{2}$

$w =$ _____

$w =$ _____

$w =$ _____

$w =$ _____

The width of the rectangle is _____.

Temperature is measured in the United States by degrees Fahrenheit and in

Canada by degrees _____.

The formula for converting Celsius to Fahrenheit is $F =$ _____.

Convert 30°C to Fahrenheit:

$F = \dfrac{9}{5}C + 32$

$F = \dfrac{9}{5}(\text{_____}) + 32$

$F =$ _____ $+ 32$

$F =$ _____

$30°C =$ _____

Solve the formula $F = \dfrac{9}{5}C + 32$ for C.

$F = \dfrac{9}{5}C + 32$

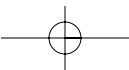_____ = _____   Subtract 32 from both sides.

_____ = _____   Multiply each side of the equation by $\dfrac{5}{9}$,

$\dfrac{5}{9}(F - 32) = C$ which is the reciprocal of $\dfrac{9}{5}$.

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3 ▶ Solve $d = rt$ for r.

_____

_____

_____ $= r$

4 ▶ Solve $V = \frac{1}{3}\pi r^2 h$ for h.

_____

_____ $= 3 \cdot \frac{1}{3}\pi r^2 h$

$3V =$ _____

$\frac{3V}{\pi r^2} =$ _____

_____ $= h$

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