Lesson 19: Rearranging Formulas

Classwork

Exercise 1

Solve each equation for *.* For part (c), remember a variable symbol, like , , and represents a number.

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Exercise 2

Compare your work in parts (a) through (c) above. Did you have to do anything differently to solve for in part (c)?

Exercise 3

Solve the equation for . The variable symbols , , and represent numbers.

Example 1: Rearranging Familiar Formulas

a. The formula for area is . Rearrange the area formula to solve for .

b. The perimeter formula for a rectangle is where represents the perimeter, represents the length, and represents the width. Rearrange the perimeter formula to solve for .

c. The area formula for a triangle is , where represents the area; represents the length of the base, and represents the height. Rearrange the area formula to solve for *h*.

**Exercise 4**

Rearrange each formula to solve for the specified variable. Assume no variable is equal to .

1. Given ,
2. Solve for . ii. Solve for .
3. Given ,
4. Solve for . Ii. Solve for .

**Example 2: Comparing Equations with one Variable to those with more than one Variable**

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| **Equation Containing More Than One Variable** | **Related Equation** |
| Solve for . | Solve for . |
| Solve for . | Solve for . |

Lesson Summary

The properties and reasoning used to solve equations apply regardless of how many variables appear in an equation or formula. Rearranging formulas to solve for a specific variable can be useful when solving applied problems.

Problem Set

Solve each equation for .

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| 1. Solve for . | 1. Solve for . | 1. Solve for . | 1. Solve for . |
| 1. Solve for . | 1. Solve for . | 1. Solve for . | 1. Solve for |

1. The science teacher wrote three equations on a board that relate velocity, distance traveled, , and the time to travel the distance on the board.

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Would you need to memorize all three equations or could you just memorize one? Explain your reasoning.