

2.1 Identify Properties for Solutions

You may be asked to identify properties used at each step.

Reasons other than properties:

- Given
- Simplify

Golden Sheet of Properties

Properties of Operations

Properties of Equality

Properties of Inequality (later in chapter)

Example:

1. $x - 4 = 0$

$$x - 4 + 4 = 0 + 4$$

$$x + \underline{0} = \underline{0} + 4$$

$$x = 4$$

Given

Addition Property of Equality

Additive Inverse Property

Additive Identity Property

2. $5y = 25$

$$\frac{5y}{5} = \frac{25}{5}$$

$$y(1) = \frac{25}{5}$$

$$y = \frac{25}{5}$$

$$y = 5$$

Given

Division Property of Equality

Multiplicative Inverse Property

Multiplicative Identity Property

Simplify

3. $\frac{x}{7} = 4$

$$\left(\frac{x}{7}\right)(7) = 4(7)$$

$$x(1) = 4(7)$$

$$x = 4(7)$$

$$x = 28$$

Given

Multiplication Property of Equality

Multiplicative Inverse Property

Multiplicative Identity Property

Simplify

4. $(y + 5) + 2 = 10$

$$y + (5 + 2) = 10$$

$$y + 7 = 10$$

$$y + \underline{7 - 7} = 10 - 7$$

$$y + \underline{0} = 10 - 7$$

$$y = 10 - 7$$

$$y = 3$$

Given

Associative Property

Simplify

Subtraction Property of Equality

Additive Inverse Property

Additive Identity Property

Simplify

HOMEWORK

Worksheet HW 2.1

Identify Properties