

## Section 2.2: The Multiplication

Tuesday, February 5, 2019

1:40 PM

## Principle of Equality

Multiplication principle:

multiplying or dividing both sides of an equation by the same non-zero number does not change the solution

examples: solve

$$\frac{3y}{3} = \frac{12}{3}$$

$$y = 4$$

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$$2 \cdot \frac{m}{2} = 7 \cdot 2$$

$$m = 14$$

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$$\frac{4}{3} \cdot \frac{3}{4} w = 6 \cdot \frac{4}{3}$$

→  
multiply  
by reciprocal

$$w = 8$$

to clear the  
coefficient

9

$$4 \cdot \frac{3}{4} w = 6 \cdot 4$$

$$\frac{3w}{3} = \frac{24}{3}$$

$$w = 8$$

$$(-7) \left( -\frac{1}{7} q \right) = \left( \frac{4}{7} \right) (-7)$$

$$q = -4$$

check:

$$-\frac{1}{7} q = \frac{4}{7}$$

$$-\frac{1}{7} (-4) = \frac{4}{7}$$

$$\frac{4}{7} = \frac{4}{7} \quad \checkmark$$

$$\text{||} \quad (-1) \left( -\frac{1}{7} q \right) = \left( \frac{4}{7} \right) (-1)$$

$$7 \cdot \frac{1}{7} q = -\frac{4}{7} \cdot 7$$

$$q = -4$$