

Digits LESSON 2-2

10/24/2019

①

Goal: I will be able to solve equations with variables on both sides

Tool Bag
Formulas, equations,
Vocabulary, etc.

Here's How... Notes & Examples

Modeling $\square = x$ $\square = -x$ $\square = +$ $\square = -$ $\square = -$

Example $3x + 5 = 2x - 4$

$\square = \square = \emptyset$

Take 2 hollow sticks away from both side
To get all the sticks on 1 side.
Add 5 negative boxes to "zero" out the positive boxes

$x = -9$

②

Equation Method

$$3x + 5 = 2x - 4$$

$$3x - 2x + 5 = \cancel{2x - 2x} - 4$$

$$x + 5 = -4$$

$$x + 5 - 5 = -4 - 5$$

$$x = -9$$

Goal \rightarrow

Check

$$3(-9) + 5 = 2(-9) - 4$$

$$-27 + 5 = -18 - 4$$

$$-22 = -22 \checkmark$$

③

U Try

$$4x - 1 = -2x + 5$$

$$4x + 2x - 1 = -2x + 2x + 5$$

$$6x - 1 = 5$$

$$6x - 1 + 1 = 5 + 1$$

$$6x = 6$$

$$\frac{6x}{6} = \frac{6}{6}$$

$$x = 1$$

Check $4(1) - 1 = -2(1) + 5$

$$4 - 1 = -2 + 5$$

$$3 = 3 \checkmark$$

④

Example

A 4' tree grows at a rate of 2.5' per year. A 6' tree grows at a rate of 2' per year. When will they be the same height?

$y = \text{years}$

Tree A = $4' + 2.5y$ Tree B = $6' + 2y$

$$A = B$$

$$4 + 2.5y = 6 + 2y$$

$$4 + 2.5y - 2y = 6 + 2y - 2y$$

$$4 + 0.5y = 6$$

$$4 + 0.5y - 4 = 6 - 4$$

$$0.5y = 2$$

$$2(0.5y) = 2(2) \quad y = 4$$