Name_____ Date:_____

Unit 2 Lesson 2

Identify properties when solving equations with variables on both sides

Do Now:

Directions: Solve the following equations and state every property that you use.

If $0.02x + 0.7 = 0.8$, then what is a solution for x?

$-.7 \quad -.7$ Subtraction prop of equality

$\frac{.02x}{.02} = \frac{.1}{.02}$ Division prop of equality

$\boxed{x = 5}$ One solution (only 5 will make this sentence true)

1. What is the solution for x in the equation $2(x-3) = 1.2 - x$?

$2x - 6 = 1.2 - x$ Distributive Prop

$+6 \quad +6$ Addition Prop of Equality

$2x = 7.2 - x$

$+x \quad +x$ Addition Prop of Equality

$\frac{3x}{3} = \frac{7.2}{3}$ Division Prop of Equality

$\boxed{x = 2.4}$ one solution

2. What is the solution of x in the equation $5(3x-2) = 15x - 10$?

$15x - 10 = 15x - 10$ Distributive

$+10 \quad +10$ Addition Prop of Equality

$15x = 15x$

$-15x \quad -15x$ Subtraction Prop of Equality

$0 = 0$

Infinite Solutions (Any # for x would make the Eqn true)

3. What is the solution to the following equation? $2(x-3) = 2x+5$

$2x - 6 = 2x + 5$ Distributive Prop

$+6 \quad +6$ Addition Prop of Equality

$2x = 2x + 11$

$-2x \quad -2x$ Subtraction Prop of Equality

$0 = 11$

NOT True: There are No solutions! (No # for x would make this Eqn true)

4. Solve the equation for d: $0.2(d-6) = 0.3d + 5 - 3 + 0.1d$

$\cdot 2d - 1.2 = .3d + 5 - 3 + .1d$ Distrib Prop

$\cdot 2d - 1.2 = .4d + 2$ Combine Like terms

$+1.2 \quad +1.2$

$\cdot 2d = .4d + 3.2$

$-.4d \quad -.4d$ Subtraction Prop of Equality

$\frac{-.2d}{-.2} = \frac{3.2}{-.2}$ Division Prop of Equality

$d = -16$

ONE SOLUTION That makes Eqn True

5. Describe the property used to convert the equation from one line to the next:

$x(1-x) + 2x - 4 = 8x - 24 - x^2$

$x - x^2 + 2x - 4 = 8x - 24 - x^2$ Distributive Prop

$+x^2 \quad +x^2$ Addition Prop of Equality

$x + 2x - 4 = 8x - 24$ Combine Like Terms

$3x - 4 = 8x - 24$ Addition Prop of Equality

$+24 \quad +24$

$3x + 20 = 8x$ Subtraction Prop of Equality

$-3x \quad -3x$

$20 = 5x$ Division Prop of Equality

$x = 2$

Exit Card:

Directions: Solve the following equations and state every property that you use.

$$\frac{3}{4}(4x-8)+5x=7x-6$$

$3x - 6 + 5x = 7x - 6$ Distributive Prop.

$8x - 6 = 7x - 6$ Combine Like Terms

$+6 \quad +6$ Addition Prop of Equality

$8x = 7x$

$-7x \quad -7x$

$\boxed{x = 0}$

How many solutions are there? 1 solution

Exit Card:

Directions: Solve the following equations and state every property that you use.

$$\frac{3}{4}(4x-8)+5x=7x-6$$

How many solutions are there?