

3.4

Oct. 12, 2006Solving Equations w/ Variables on Both Sides

$$\text{ex 1)} \quad 7x + 19 = -2x + 55$$

$$\begin{array}{r} +2x \\ \hline \end{array}$$

$$9x + 19 = 55$$

$$\begin{array}{r} -19 \\ \hline \end{array}$$

$$\frac{9x}{9} = \frac{36}{9}$$

check

$$7(4) + 19 \stackrel{?}{=} -2(4) + 55$$

$$28 + 19 \stackrel{?}{=} -8 + 55$$

$$47 = 47 \quad \checkmark$$

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

ex 2)  $80 - 9y = 6y$

$$\begin{array}{r} 80 - 9y = 6y \\ + 9y \quad + 9y \\ \hline 16 \cancel{80} = 15y \\ \hline 315 \quad 15 \end{array}$$

$$\frac{16}{3} = y$$

$$\text{ex 3)} \quad \cancel{3x} - 10 + \cancel{4x} = 5x - 6$$

$$\begin{array}{r} 7x - 10 = 5x - 6 \\ -5x \qquad -5x \\ \hline \end{array}$$

$$\begin{array}{r} 2x - 10 = -6 \\ +10 \qquad +10 \\ \hline \end{array}$$

$$\frac{2x}{2} = \frac{4}{2}$$

check:

$$3(2) - 10 + 4(2) \stackrel{?}{=} 5(2) - 6$$

$$6 - 10 + 8 \stackrel{?}{=} 10 - 6$$

$$-4 + 8 \stackrel{?}{=} 4$$

$$4 = 4 \checkmark$$

$$\underline{\underline{x = 2}}$$

# # of Solutions

Linear equations have 1 Solution.

Some Linear equations have NO Solution

Identity is an equation that is true for  
All values of the Variables.

Determine if the equation has, 1 solution, no solution, or is the identity.

$$\begin{aligned} \text{a) } 3(x+2) &= 3x+6 \\ 3(x)+3(2) &= 3x+6 \\ 3x+6 &= 3x+6 \\ \underline{-3x \quad -3x} & \\ 6 &= 6 \rightarrow \text{True... Identity} \end{aligned}$$

$$\begin{aligned} \text{b) } 3(x+2) &= 3x+4 \\ 3(x)+3(2) &= 3x+4 \\ 3x+6 &= 3x+4 \\ \underline{-3x \quad -3x} & \\ 6 &= 4 \rightarrow \text{False... No Solution} \end{aligned}$$

$$\begin{aligned} \text{c) } 3(x+2) &= 2x+4 \\ 3(x)+3(2) &= 2x+4 \\ 3x+6 &= 2x+4 \\ \underline{-2x \quad -2x} & \\ x+6 &= 4 \\ \underline{-6 \quad -6} & \\ \underline{\underline{x=-2}} & \rightarrow \text{One Solution} \end{aligned}$$

O.T.L.

① Pg 154-155:

9-14(a);

17-33(o); 48

② Turn in Pg 150 1-6 all