ALG III

8/22/17

Section 2.1 & 2.3
Linear Equations in One Variable

Warm Up:

Solve.

$$4x-2x-5=4+6x+3$$

$$2x-5=7+6x$$
$$-2x \quad -2x$$
$$-5=7+4x$$
$$-12=4x$$
$$-3=x$$

Warm Up #2:

$$2(k-5)+3k=k+6$$

$2k-10+3k=k+6$

$5k-10=k+6$

$4k-10=6$

$4k=16$

$k=4$

When fractions or decimals appear as coefficients in equations, our work can be made easier if we multiply each side of the equation by the least common denominator (LCD) of all fractions.

EX #1: Solve.

$$\frac{x+7}{6}+\frac{2x-8}{2}=-4$$

$3 \quad 6$

$x+7+3(2x-8)=-24$

$x+7+6x-24=-24$

$7x-17=-24$

$7x=-7$

$x=-1$

EX #2: Solve.

$$0.06x+0.09(15-x)=0.07(15)$$

$100 \quad 100$

$6x+9(15-x)=7(15)$

$6x+135-9x=105$

$-3x+135=105$

$-3x=-30$

$x=10$

EX #3: For the 2008 baseball season, the Major League Baseball leaders in runs batter in (RBIs) were Ryan Howard of the Philadelphia Phillies and Josh Hamilton of the Texas Rangers. These two players had a total of 276 RBIs, and Howard had 16 more than Hamilton. How many RBIs did each player have?

$R = J + 16$

$R + J = 276$

$J + 16 + J = 276$

$2J + 16 = 276$

$2J = 260$

$J = 130$

$R = J + 16 = 146$

130

EX #4:

187.5 is 125% of some number, what is that number?

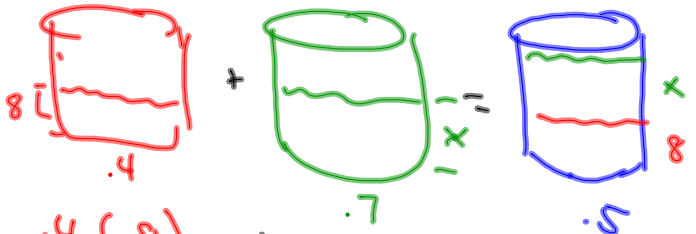
$125\% \cdot m = 187.5$

$\frac{4}{5} \cdot \frac{5}{4} \cdot m = 187.5 \cdot \frac{4}{5}$

$m = 150$

EX #5: Mixture Problems!

A chemist must mix 8L of a 40% acid solution with some 70% solution to get a 50% solution. How much of the 70% solution should be used?



$.4(8) + .7(x) = .5(8+x)$

$3.2 + .7x = 4 + .5x$

$3.2 + .2x = 4$

$.2x = .8$

$x = 4$