Lesson 3.2 - Solving First-Degree Equations Involving One Step – Part I

Why do we solve equations?

Class Notes – A solution to each equation is given. Check to see if the solution is correct or incorrect.

LP#1 x + 5 = 8 x = 3	x – 8 = 7 x = 18	4x = 36 x = 8	$\frac{x}{9} = 3$ $x = 27$
LP#2 75 = 100 – x x = 15	19 + x = 52 x = 33	$\frac{x}{22} = 3$ $x = 66$	156 = 12x x = 12

To solve equations we use properties of equality to isolate the variable to determine its value. Let A, B, C be rational numbers, then

- If $A = B$, then $A + C = B + C$ — Addition Property of Equality
- If $A = B$, then $A - C = B - C$ — Subtraction Property of Equality
- If $A = B$, then $A \times C = B \times C$ — Multiplication Property of Equality
- If $A = B$, then $\frac{A}{C} = \frac{B}{C}$ — Division Property of Equality

For additional reading go to http://en.wikipedia.org/wiki/Equations#Properties.
Read the section titled "Properties".

State which property to use here.	Solve each equation here.
	$x + 6 = 79$
	$x - 9 = 37$
	$5x = 65$

Class Notes – Solve each first-degree equation and check. If you do not solve an equation, explain why.

LP#3 y + 8 = 20	x – 6 = 10	x^2 +1 = 26
LP#4 m – 10 = -2	h^4 + h = 6	y + 96 = 56

LP#5 $3t = 24$	$4x^3 = 32$	$-36 = 4b$
LP#6 $200 = 2x^2$	$-42 = -7x$	$-2d = 84$

Class Notes – Solve each equation for *x*. State the equality property that is used.

LP#7 $x - m = p$	$w = x + y$	$h + x = k$
LP#8 $6x = r$	$c = -11x$	$15p = 3x$

Review – Solve each first-degree equation and check. If you do not solve an equation, explain.

R#1 $15x = 60$	$x - 15 = 49$	$k^3 + 1 = 28$
R#2 $10 - w = 87$	$m^2 = m + 6$	$\frac{x}{14} = 9$
R#3 $4p^2 = 100$	$8k = 96$	$76 + x = 32$