FEBRUARY 11, 2016

UNIT 5: LINEAR EQUATIONS AND INEQUALITIES

SECTION 6.1: SOLVING EQUATIONS BY USING INVERSE OPERATIONS

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MATH 9

WHAT'S THE POINT OF TODAY'S LESSON?

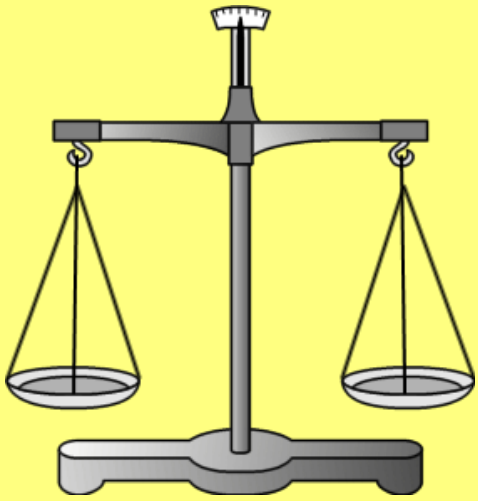
We will continue working on the Math 9 Specific Curriculum Outcome (SCO) "Patterns and Relations 3" OR "PR3" which states:

"Model and solve problems using linear equations in a variety of forms ($ax = b$; $ax + b = c$; $ax + b = cx + d$; $a(bx + c) = d(ex + f)$ etc.) concretely, pictorially and symbolically where a, b, c, d, e and f are rational numbers."

What does THAT mean???

SCO PR3 means ALGEBRA!!!

ALGEBRA IS A "BALANCING ACT"...



WARM UP:

FOR THE STATEMENT BELOW, WRITE, SOLVE AND VERIFY THE EQUATION TO DETERMINE THE NUMBER:

"SEVENTY IS EQUAL TO FOUR TIMES A NUMBER MINUS SIX."

$$70 = 4x - 6$$

$$70 + 6 = 4x - 6 + 6$$

$$\frac{76}{4} = \frac{4x}{4}$$

$$19 = x$$

LS	RS
70	$4x - 6$
	$4(19) - 6$
	$76 - 6$
	70

$LS = RS \therefore x = 19.$

SOLUTIONS TO WORKSHEETS COMPLETED AS HOMEWORK LAST NIGHT:

"Books Never Written"

Answers: ***The Break-in*** **by Jimmy D. Lock**
Origin of Man **by Eva Lu Shun**
Making Soap **by Phil T. Hans**

"Why Did Gonzo Walk Around..."

Answer: "He was chilling two birds with one cone."

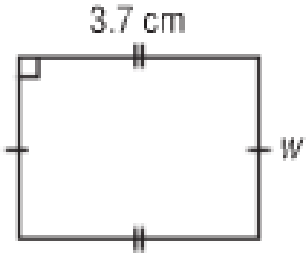
EX. 5:

A rectangle has length 3.7 cm and perimeter 13.2 cm.

a) Write an equation that can be used to determine the width of the rectangle.

b) Solve the equation.

c) Verify the solution.



a) $3.7 + w + 3.7 + w = 13.2$

$2w + 7.4 = 13.2$

OR

$2(3.7 + w) = 13.2$

$7.4 + 2w = 13.2$

$7.4 + 2w - 7.4 = 13.2 - 7.4$

$\frac{2w}{2} = \frac{5.8}{2}$

$w = 2.9\text{ cm}$

LS	RS
$2(3.7+w)$	13.2
$2(3.7+2.9)$	
$2(6.6)$	
13.2	

$LS = RS \therefore w = 2.9\text{ cm}$.

Also... $\frac{2(3.7+w)}{2} = \frac{13.2}{2}$

$$3.7 + w = 6.6$$

$$3.7 + w - 3.7 = 6.6 - 3.7$$

$$w = 2.9\text{ cm}$$

EX. 6: Sometimes, you have to translate words into math:

"20 is equal to 4 times a number, minus 1.6."

a) Write then solve the equation.
b) Verify the solution.

a)

$$\begin{aligned} 4x - 1.6 &= 20 \\ 4x - 1.6 + 1.6 &= 20 + 1.6 \\ \frac{4x}{4} &= \frac{21.6}{4} \\ x &= 5.4 \end{aligned}$$

b)

LS	RS
$4x - 1.6$	20
$4(5.4) - 1.6$	
$21.6 - 1.6$	
20	

LS = RS $\therefore$ x = 5.4.

EX. 7: Sometimes, you have to translate words into math:

"Seven percent of a number is 56.7."

7%

= 7/100

= 0.07

a) Write then solve the equation.
b) Verify the solution.

a) 7 % = 7/100 = 0.07

$$\frac{0.07n}{0.07} = \frac{56.7}{0.07}$$

$$n = 810$$

b)

LS	RS
$0.07n$	56.7
$0.07(810)$	
56.7	

LS = RS ∴ n = 810.

CONCEPT REINFORCEMENT:

MMS9:

Page 273: #9 to #11, #14 to #18

***In questions that ask you to "verify the solution", do so only for the last part of the question. For example, in #9, verify only part (d).**
***Use #16 to help with #17.**

Please don't forget to check your answers in the back of the book - this is part of your homework (these answers start on page 513).

HEADS UP - QUIZ SOON!!! There will be a short quiz on Section 6.1 once we have completed it, probably around Feb. 15. This will involve one-step and two-step equations, the distributive property, equations with one denominator and two denominators and verifications.