

# October 6th

Due Today:

GW

Due Next Class:

GW

## Unit 2: Solving Equations Lesson #: 2.7: More Modeling



**Get Ready:** Please get out GW levels to be checked!



Use modeling to answer this question:

1. You have \$15 to spend on school supplies. If you bought 3 notebooks, a pack of pencils for \$4 and have \$2 left over, how much do notebooks cost? Write an equation that represents this situation.
2. The sum of four consecutive integers is 18. What is the value of the largest integer?

## Check your answers to 2.8

3)  $r = \frac{c}{a\pi}$

4)  $m = \frac{e}{c^2}$

7)  $h = \frac{V}{\pi r^2}$

8)  $r = \frac{S}{a\pi h}$

9)  $B = \frac{3V}{h}$

10)  $h = \frac{3V}{\pi r^2}$

11)  $R = \frac{E}{I}$

12)  $T = \frac{VP}{K}$

13)  $x = \frac{-b}{a}$

14)  $x = \frac{y-b}{m}$

15)  $W = \frac{P-2L}{2}$

16)  $y = \frac{c-\alpha x}{b}$

17)  $S = -Dnt + C$

18)  $R = \frac{100D}{(100-x)}$

19)  $r = \frac{B-C}{C}$

20)  $t = \frac{A-P}{PR}$

## Get Ready Review

1. You have \$15 to spend on school supplies. If you bought 3 notebooks, a pack of pencils for \$4 and have \$2 left over, how much do notebooks cost? Write an equation that represents this situation.

$$n = \text{cost of a notebook}$$

$$3n + 4 + 2 = 15$$

$$3n + 6 = 15$$

$$3n = 9$$

Each notebook costs \$3.

$$n = 3$$

$$\therefore 3n + 4 + 2 = 15$$

or

$$3n + 4 = 15 - 2$$

2. The sum of four consecutive integers is 18. What is the value of the largest integer?

$$n = 1^{\text{st}} \#$$

$$n + n + 1 + n + 2 + n + 3 = 18$$

$$4n + 6 = 18$$

$$4n = 12$$

$n = 3$   
The biggest # is 6

You have \$25 to spend at the movies. You have a few options:

a. You can buy the ticket (\$10), 2 candies and a large drink (\$6) and have \$1 left over.

b. You can buy the ticket (\$10), 3 candies and a small drink (\$3) and have nothing left over.

$$\boxed{x = \text{\$ per candy}}$$

$$10 + 2x + 6 + 1 = 25$$

$$2x + 17 = 25$$

$$\underline{-17 \quad -17}$$

$$\begin{array}{r} 2x = 8 \\ \hline 2 \quad 2 \\ x = 4 \end{array}$$

$$10 + 3x + 3 = 25$$

$$3x + 13 = 25$$

$$\underline{+13 \quad -13}$$

$$\begin{array}{r} 3x = 12 \\ \hline 3 \quad 3 \\ x = 4 \end{array}$$

$$10 + 2x + 6 + 1 = 10 + 3x + 3$$

## Transitive Property

If  $a=b$  and  $b=c$ ,  
then  $a=c$  !

Mike can buy 2 slices of pizza, a bottle of water for \$1, and chips for \$1 and have \$7 left over, or he can buy 3 slices of pizza and a \$2 drink and have \$4 left over.



If  $c$  = cost of a slice of pizza, write an equation that represents this situation.

$$2c + 1 + 1 + 7 = 3c + 2 + 4$$

Solve your equation to determine the cost of a slice of pizza.

$$2c + 1 + 1 + 7 = 3c + 2 + 4$$

$$\begin{array}{r} 2c + 9 = 3c + 6 \\ -2c \quad -2c \\ \hline 3 = c \end{array}$$

each slice is  
\$3

Use your answer to determine the amount of money Mike has to spend on lunch.

$$\begin{aligned} 2c + 9 &= 3c + 6 \\ 2(3) + 9 &= 3(3) + 6 \\ 6 + 9 &= 9 + 6 \\ 15 &= 15 \end{aligned}$$

Mike has  
\$15

## More Modeling Worksheet

- ① Define a variable
- ② Model an equation
- ③ Solve it!
- ④ Answer in a full sentence!

Kim's Homework	Juan's B-day \$
$P = \text{time to do Powerspeak}$	$x = \$ \text{ w/ friends.}$
$20 + 10 + 5P = 50 + 2P$ +7	$110 + 5x + 40 = 200 + 2x + 10$
$\begin{array}{r} 30 + 5P = 57 + 2P \\ -2P \quad \quad \quad -2P \\ \hline 30 + 3P = 57 \end{array}$ $\begin{array}{r} -30 \quad \quad \quad -30 \\ \hline 3P = 27 \end{array}$ $\boxed{P = 9}$	$\begin{array}{c} \vdots \\ x = 20 \end{array}$
$\begin{array}{r} 30 + 45 \\ 30 + 5P \\ 30 + 5(9) \\ 30 + 45 \\ 75 \end{array}$	$\begin{array}{r} 110 + 5(x) + 40 \\ 110 + 100 + 40 \\ \boxed{= 250} \end{array}$

# Recap

Today in MATH

*Modeling*

Homework:

*Gateway! Be at level 13/14 by tomorrow*

Next Class:

*SEQ w/ fractions game*

