1-3-19

Aim: SWBAT solve consecutive integer word problems algebraically.

HW: Packet Pages 40 - 41

Review due tomorrow & Test Monday

Do Now: Packet Page 39

Homework (continued) - Word Problems using Equations with Variables on Both Sides

Directions: Define a variable (write a let statement). Then write an equation and solve each word problem. Write your final answer in a complete sentence.

1) When two times a number is increased by 10, the result is 1 more than 3 times the number. Find the number.

let n = the number

$2n+10 = 3n+1$
$-2n \quad -2n$
$10 = n+1$
$-1 \quad -1$
$9 = n$

The number is 9.

2) The greater of two numbers is 7 more than the lesser. Three times the greater number is 5 more than 4 times the lesser number. Find the numbers.

let n = the lesser #
let $n+7$ = the greater #

$3(n+7) = 4n+5$
$3n+21 = 4n+5$
$-3n \quad -3n$
$21 = n+5$
$-5 \quad -5$
$16 = n$

$n+7 = 23$

The numbers are 16 and 23.

3) The greater of two numbers is twice the lesser. If the greater is increased by 18, the result is 4 less than 4 times the lesser. Find the numbers.

let n = the lesser #
let $2n$ = the greater #

$2n+18 = 4n-4$
$-2n \quad -2n$
$18 = 2n-4$
$+4 \quad +4$
$\frac{22}{2} = \frac{2n}{2}$
$11 = n$

$22 = 2n$

The numbers are 11 and 22.

4) The greater of two numbers is 1 less than 4 times the lesser. Three times the lesser number is 4 less than the greater. Find the numbers.

let n = the lesser #
let $4n-1$ = the greater #

$3n = 4n-1-4$
$3n = 4n-5$
$-4n \quad -4n$
$\frac{-n}{-1} = \frac{-5}{-1}$
$n = 5$

The numbers are 5 and 19.

Aim: SWBAT review solving word problems using and equation AND solve consecutive integer word problems.

Do Now: For #1 and #2 → Define a variable, write an equation and solve.

1) Twice the difference of a number and 4 is -12.

let n = the #

$2(n-4) = -12$
$2n - 8 = -12$
$+8 \quad +8$
$\frac{2n}{2} = \frac{-4}{2}$
$n = -2$

The number is -2.

2) Marc bought a shirt and a pair of pants at his favorite store. The total price of the two items was $54. If the pants cost $16 more than the shirt, find the cost of the pants and the shirt.

let x = the cost of the shirt
let x+16 = " " pants

$x + (x+16) = 54$
$2x + 16 = 54$
$-16 \quad -16$
$\frac{2x}{2} = \frac{38}{2}$
$x = 19$

$x+16$
35

The shirt was $19 and the pants are $35.

3) What are consecutive integers? Give an example of 2 consecutive integers.

Intergers that follow one another.

-3, -2

Notes.

Consecutive Integer Word Problems

Step 1: Define your variables (Write 3 let statements)

Step 2: Write an additional let statement for each integer.

Step 3: Write an equation.

Step 4: Solve your equation.

Step 5: Plug in and find the integers.

Step 6: Check your answers.

1) Find two consecutive integers whose sum is -67.

let n = the 1st cons. int.
let n+1 = the 2nd " "

$n + (n+1) = -67$
$2n + 1 = -67$
$-1 \quad -1$
$\frac{2n}{2} = \frac{-68}{2}$
$n = -34$
$n + 1 = -33$

The integers are -34 and -33.

2) Find two consecutive odd integers whose sum is 88.

let n = the 1st cons. odd int.
let $n+2$ = the 2nd " "

$n+(n+2)=88$
$2n+2=88$
$-2 \quad -2$
$\frac{2n}{2}=\frac{86}{2}$
$n=43$
$n+2=45$

The cons. odd int. are 43 and 45.

3) Find two consecutive even integers whose sum is 226.

4) Find three consecutive odd integers whose sum is -165.

HW: Solving Consecutive Integer Word Problems

Define a variable, write an equation, and solve each word problem.

1) The sum of three consecutive integers is −57. Find the three integers.

* 2) The sum of three consecutive even integers is −42. Find the three integers.

let n = the 1st cons. even int.
let $n+2$ = the 2nd " "
let $n+4$ = the 3rd " "

$n+(n+2)+(n+4) = -42$
$3n+6 = -42$
$-6 \quad -6$
$\frac{3n}{3} = \frac{-48}{3}$
$n = -16$

$n+2 = -14$
$n+4 = -12$

The cons. even int. are −16, −14, and −12.

**3) Find two consecutive odd integers such that 2 times the lesser is 19 less than 3 times the greater.

***4) Find the perimeter of the triangle. All sides of the triangle are equal in length. Your final answer should include units.