

# DO NOW

List 3 consecutive integers.

## 2.1 Consecutive Integer Problems

Consecutive Integers - Ex: 4, 5, 6

let  $x = 1^{\text{st}}$  consecutive integer  
 $x+1 = 2^{\text{nd}}$   
 $x+2 = 3^{\text{rd}}$   
 $x+3 = 4^{\text{th}}$   
 $\vdots$

BASIC  
SETUP

Consecutive Even Integers - Ex: 4, 6, 8

let  $x = 1^{\text{st}}$  consecutive even integer  
 $x+2 = 2^{\text{nd}}$   
 $x+4 = 3^{\text{rd}}$   
 $x+6 = 4^{\text{th}}$   
 $\vdots$

Consecutive Odd Integers - Ex: 1, 3, 5 or -9, -7, -5

let  $x = 1^{\text{st}}$  consecutive odd integer  
 $x+2 = 2^{\text{nd}}$   
 $x+4 = 3^{\text{rd}}$   
 $x+6 = 4^{\text{th}}$   
 $\vdots$

\*\*\*Usually straight translation

### Example:

1. Find two consecutive even integers with a sum of 58.

let  $x = 1^{\text{st}}$  consecutive even integer  
 $x+2 = 2^{\text{nd}}$

$$x + (x+2) = 58$$

$$x + x + 2 = 58$$

$$2x + 2 = 58 - 2$$

$$2x = 56$$

$$x = \frac{56}{2}$$

$$x = 28$$

$$\begin{array}{l} x+2 \\ 28+2 \\ 30 \end{array}$$

The integers are 28 and 30.

2. Find two consecutive integers if twice the second increased by the first is 35.

let  $x = 1^{\text{st}}$  consecutive integer  
 $x+1 = 2^{\text{nd}}$

$$2(x+1) + x = 35$$

$$2x + 2 + x = 35$$

$$3x + 2 = 35$$

$$3x = 35 - 2$$

$$3x = 33$$

$$x = \frac{33}{3}$$

$$x = 11$$

$$\begin{array}{l} x+1 \\ 11+1 \\ 12 \end{array}$$

The integers are 11 and 12.

3. Find three consecutive odd integers if twice the second is 15 more than the third.

let  $x = 1^{\text{st}}$  consecutive odd integer  
 $x+2 = 2^{\text{nd}}$   
 $x+4 = 3^{\text{rd}}$

$$2(x+2) = (x+4) + 15$$

$$2x + 4 = x + 4 + 15$$

$$2x + 4 = x + 19$$

$$2x + 4 - x = 19$$

$$2x - x = 19 - 4$$

$$x = 15$$

$$\begin{array}{ll} x+2 & x+4 \\ 15+2 & 15+4 \\ 17 & 19 \end{array}$$

The integers are 15, 17 and 19.

# HOMEWORK

Worksheet HW 2.1 Consecutive Integers