Warm Up: Vocabulary

Define consecutive

Define integer

9/8 Equations Involving Consecutive Integers

1) Find two consecutive integers whose sum is 211.

1st integer : x
2nd integer : $x+1$

$x + x+1 = 211$

$2x+1 = 211$
$-1 \quad -1$

$\frac{2x}{2} = \frac{210}{2}$

$x = 105$

The two consecutive integers are 105 + 106.

3) Find two consecutive **odd** integers whose sum is 68.

1st odd integer : x
2nd odd integer : $x+2$

$x + x+2 = 68$

$2x+2 = 68$
$-2 \quad -2$

$\frac{2x}{2} = \frac{66}{2}$

$x = 33$

The two consec. odd integers are 33 + 35.

5) Find five consecutive integers whose sum is 395.

$x + x+1 + x+2 + x+3 + x+4 = 395$

$5x + 1 + 2 + 3 + 4 = 395$

$5x + 10 = 395$

$-10 \quad -10$

$\frac{5x}{5} = \frac{385}{5}$

$x = 77$

2nd = 78

3rd = 79

4th = 80

5th = 81

Part 2

7) Find two consecutive **odd** integers whose sum is -88.

1st odd integer : x

2nd odd integer : $x+2$

$x + x+2 = -88$

$2x + 2 = -88$

$-2 \quad -2$

$\frac{2x}{2} = \frac{-90}{2}$

$x = -45$

The two consecutive odd integers are -45 & -43.

9) Find two consecutive **even** integers such that the sum of the larger and twice the smaller is 62.

1st even integer: x

2nd even integer: $x+2$

larger + twice the smaller

$$x+2+2x=62$$

$$3x+2=62$$

$$-2 \quad -2$$

$$3x=60$$

$$\frac{3x}{3}=\frac{60}{3}$$

$$x=20$$

20, 22

11) Find three consecutive **odd** integers such that the sum of the smallest and 4 times the largest is 61.

1st odd int x

2nd odd int $x+2$

3rd odd int $x+4$

$$x+4(x+4)=61$$

$$x+4x+16=61$$

$$5x+16=61$$

$$-16 \quad -16$$

$$5x=45$$

$$\frac{5x}{5}=\frac{45}{5}$$

$$x=9$$

1st = 9

2nd = 11

3rd = 13