# Consecutive Integers

Consecutive = one right after the other.

To find consecutive integers:

Let 1st integer = $x$

Let 2nd integer = $x + 1$

3rd integer = $x + 2$

$$\vdots$$

$$= x + \underline{?}$$

Ex) #49 pg. 165

$$x + x + 1 = 137$$

# Consecutive Integers (cont.)

## Even and Odd

Let 1st even/odd integer = $x$

2nd " " $= x + 2$

3rd " " $= x + 4$

$$\vdots$$

$$\underbrace{\qquad\qquad\qquad\qquad\qquad\qquad}$$

works for even AND odd integers

Ex) Three times the larger of 2 consecutive even integers, decreased by the smaller is 58. Find the numbers.

Let 1st even $= x$

2nd even $= x+2$

$$3(x+2) - x = 58$$

51) Let $x = $ 1st pg # $\Rightarrow$ 146

$x + 1 = $ 2nd pg # $\Rightarrow$ 147

$$x + x + 1 = 293$$

Ex) Find two consecutive EVEN integers such that the smaller, added to twice the larger, is 292.

Let 1st even $= x$ (smaller)

2nd even $= x + 2$ (larger)

$$x + 2(x+2) = 292 \qquad \text{So, 1st even} = 96$$
$$x + 2x + 4 = 292 \qquad \qquad \text{2nd even} = 98$$
$$3x + 4 = 292$$
$$3x = 288$$
$$x = 96$$

Ex) Find three consecutive odd integers whose sum is 363.

Let # 1st odd = $x$

2nd odd = $x + 2$

3rd odd = $x + 4$

Solution: $x + x + 2 + x + 4 = 363$

$$3x + 6 = 363$$
$$\phantom{3x} -6 \quad -6$$
$$\overline{3x = 357}$$
$$x = 119$$

1st odd = 119

2nd odd = 121

3rd odd = 123

# Problem Solving

## 5~~½~~ Step Problem Solving Process

① Read the problem carefully

② Identify all important information.

③ Make an equation.

④ Solve the equation

⑤ Check your solution

**(21)** Win: $2x + 19$

losses: $x$

$82 = $ wins $+$ losses

$82 = 2x + 19 + x$

$82 = 3x + 19$

$\begin{array}{r} 82 = 3x + 19 \\ -19 \qquad -19 \\ \hline 63 = 3x \end{array}$

$\boxed{21 = x}$

Lost: 21 games

Won: 61 games

**(22)**