Consecutive Integer Word Problems

<u>Critical Thinking Skills:</u>
* Gathering and organizing data
* Identifying questions which need to be answered

Consecutive Integer
Word Problems

What are some examples of :

Consecutive Integers:

3 & 4 $x , x+1$

102 & 103

102 & 101

"Our apart"

4 & 6

**Consecutive Even or
Odd Integers:**

3 & 5

$x , x+2$

"two apart"

Consecutive Integer
Word Problems

What are some examples of :

Consecutive Integers:

$$4: \quad X$$
$$5: \quad X+1$$
$$6: \quad X+2$$
$$\downarrow$$

**Consecutive Even or
Odd Integers:**

$$2\ 1: \quad X$$
$$4\ 3: \quad X+2$$
$$6\ 5: \quad X+4$$
$$\downarrow \quad \downarrow \qquad \downarrow$$

ex 1: Find two consecutive integers whose sum is 373.

Let $x = 1^{st}$ integer

$(x+1) = 2^{nd}$ integer

$1^{st} + 2^{nd} = 373$

$x + (x+1) = 373$

$2x + 1 = 373$

$ -1 -1$

$\dfrac{2x}{2} = \dfrac{372}{2}$ $x = 186$

$ x+1 = 187$

Steps:
1). How many integers?
2). Designate variables
   -look for even/odd
3). Find relationship
4). Translate (sum,
5). Solve   difference,
6). Sentence   etc

The 2 consec. integers are 186 & 187.

ex 1: Find two consecutive integers whose sum is 373.

$1: X$ (186) $X+X+1=373$

$2: X+1$ (187) $2x=372$

$X=186$

Find: #'s

The integers are 186 and 187.

Steps:
1). How many integers?
2). Designate variables
   -look for even/odd
3). Find
4). Translate
5). Solve
6). Sentence

ex 2: Find two consecutive odd integers whose sum is 44.

Let $\overline{x}$ = 1st odd int. = 21

$x+2$ = 2nd odd int. = 23

the 2 odd integers are 21 & 23.

$$\frac{}{44} \checkmark$$

1st + 2nd = 44

$x + x + 2 = 44$
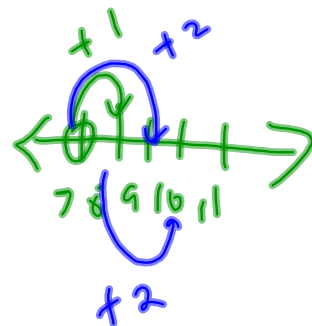
$2x + 2 = 44$

$-2 \quad -2$

$$\frac{2x}{2} = \frac{42}{2}$$

$x = 21$

ex 2: **Find two consecutive odd integers whose sum is 44.**

1: X (21)

2: X+2 (23)

$X+X+2=44$

$2X = 42$

$X = 21$

Find:

integers

The integers are 21 and 23.

ex 3: **The largest of three consecutive even integers is three times the smallest integer. Find the largest integer.**

largest $= 3 *$ smallest

$\mathcal{L}$et $x = 1^{st}$ even int

$x+2 = 2^{nd}$ " "

$x+4 = 3^{rd}$ " "

$x+4 = 3x$

$4 = 2x$

$\dfrac{4}{2} = x$

$2 = x$

$x+2+2$

$2+2 = 4$

$2+4 = 6$

$4 \to 6 \to 8$

$3 \to 5 \to 7$

even
v
the integers
are 2, 4, & 6

ex 3:   **The largest of three consecutive even integers is three times the smallest integer. Find the largest integer.**

1: x (2)

2: x+2

3: x+4 (6)

Find:

largest
integer

$x+4 = 3(x)$

$x+4 = 3x$

$4 = 2x$

$2 = x$

The largest integer is 6.

Extra Practice...

1: **The sum of two consecutive integers is 93. Find the smaller integer.   (Valley Forge Elementary)**

2: **Four cousins were born at 2 year intervals. The sum of their ages is 36. Find their ages.   (New Eagle)**

3: **The greater of two consecutive even integers is six less than twice the smaller. Find the greater integer. (Hillside/ other schools)**

Extra Practice...

1:   The sum of two consecutive integers is 93. Find the smaller integer.   (Valley Forge Elementary)

2: **Four cousins were born at 2 year intervals. The sum of their ages is 36. Find their ages.**   **(New Eagle)**

Let $x =$ 1st cousins age

$x + 2 =$ 2nd cousins age

$x + 4 =$ 3rd cousins age

$x + 6 =$ 4th cousins age

$$x + x + 2 + x + 4 + x + 6 = 36$$

$$4x + 12 = 36$$
$$ -12 \quad -12$$
$$\frac{4x}{4} = \frac{24}{4}$$

$$x = 6$$

$$x + 2 = 8$$
$$x + 4 = 10$$
$$x + 6 = 12$$

Their ages are 6, 8, 10, and 12.

3:   **The greater of two consecutive even integers is six less than twice the smaller. Find the greater integer. (Hillside/ other schools)**

Extra Practice...

1:   The sum of two consecutive integers is 93. Find the smaller integer.   (Valley Forge Elementary)

The smaller number is 46.

2:   Four cousins were born at 2 year intervals. The sum of their ages is 36. Find their ages.   (New Eagle)

Their ages are 6,8,10, & 12.

3:   The greater of two consecutive even integers is six less than twice the smaller. Find the greater integer. (Hillside/ other schools)

The greater integer is 10.