

2.1 Consecutive Integer Word Problems

Consecutive Integers -

let x = 1st Consecutive Integer
 $x+1$ = 2nd
 $x+2$ = 3rd
 \vdots

Consecutive Even Integers -

let x = 1st consecutive even integer
 $x+2$ = 2nd
 $x+4$ = 3rd
 \vdots

Consecutive Odd Integers -

let x = 1st consecutive odd integer
 $x+2$ = 2nd
 $x+4$ = 3rd
 \vdots

***Usually straight translation

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Example:

1. Find three consecutive even integers such that ^($x+4$) the third is 8 less than twice the second.

let x = 1st consecutive even integer
 $x+2$ = 2nd
 $x+4$ = 3rd

$$(x+4) = 2(x+2) - 8$$

$$x+4 = 2(x)+2(2)-8$$

$$x+4 = 2x+4-8$$

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

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

$$-x+4 = -4$$

$$-x = -4-4$$

$$-x = -8$$

$\frac{x}{8}$	$\frac{x+2}{8+2}$	$\frac{x+4}{8+4}$
	10	12

The 3 integers are 8, 10 and 12

$$x = \frac{-8}{-1}$$

$$x = 8$$

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2. Twice the second of two consecutive integers decreased by the first is 10. Find the integers.

let x = 1st consecutive integer
 $x+1$ = 2nd

$$2(x+1) - x = 10$$

$$2(x)+2(1) - x = 10$$

$$2x+2-x=10$$

$$x+2=10$$

$$x=10-2$$

$$x=8$$

The 2 integers are 8 and 9.

$\frac{x}{8}$	$\frac{x+1}{8+1}$
	9

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3. Find two consecutive integers whose sum is 59.

let x = 1st consecutive integer
 $x+1$ = 2nd

$$x + (x+1) = 59$$

$$x + x + 1 = 59$$

$$2x+1=59$$

$$2x=59-1$$

$$2x=58$$

$$x = \frac{58}{2}$$

$$x=29$$

The two integers are 29 and 30

$\frac{x}{29}$	$\frac{x+1}{29+1}$
	30

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4. Three times the second of two consecutive even integers, increased by twice the first is 46. Find the integers.

let x = 1st consecutive even integer
 $x+2$ = 2nd

$$3(x+2) + 2x = 46$$

$$3(x)+3(2) + 2x = 46$$

$$3x+6+2x=46$$

$$5x+6=46$$

$$5x=46-6$$

$$5x=40$$

$$x = \frac{40}{5}$$

$$x=8$$

The two integers are 8 and 10.

$\frac{x}{8}$	$\frac{x+2}{8+2}$
	10

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HOMEWORK

Worksheet - Consecutive Integer Problems

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