

CONSECUTIVE INTEGER PROBLEMS

1) Choose the “type” of consecutive integers:

Consecutive Integers	Consecutive Even or Odd Integers
1st # = x 2nd # = $x + 1$ 3rd # = $x + 2$ etc.	1st # = x 2nd # = $x + 2$ 3rd # = $x + 4$ etc.

The first number is *always* x .

2) Set up an equation that does what the problem tells you to do (often just add them up and set equal to a number).

3) Solve the equation for x .

4) Answer the question using the value of x you just found (usually just substitute the value of x into each of the consecutive integers).

Examples

- 1) Find two consecutive integers whose sum is 95.

Let x = the first integer. }
 Let $x + 1$ = the second integer. } $x + x + 1 = 95$

$$\begin{array}{r} 2x + 1 = 95 \\ \underline{-1 \quad -1} \\ 2x = 94 \\ \underline{2 \quad 2} \\ x = 47 \end{array}$$

47 = the first integer.
 $47 + 1 = 48$ = the second integer.

47 and 48

- 2) The sum of the ages of the three Rodriguez brothers is 63.
 If their ages can be represented as consecutive integers,
 what is the age of the middle brother?

Let x = the youngest brother. }
 Let $x + 1$ = the middle brother. } $x + x + 1 + x + 2 = 63$
 Let $x + 2$ = the oldest brother. } $3x + 3 = 63$

$$\begin{array}{r} 3x + 3 = 63 \\ \underline{-3 \quad -3} \\ 3x = 60 \\ \underline{3 \quad 3} \\ x = 20 \end{array}$$

$20 + 1 = 21$ = the middle brother.

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- 3) Find three consecutive even integers such that the sum
 of the smallest integer and twice the second is 12 more
 than the third.

Let x = the smallest even integer. }
 Let $x + 2$ = the second even integer. } $x + 2(x + 2) = (x + 4) + 12$
 Let $x + 4$ = the third even integer. } $x + 2x + 4 = x + 4 + 12$

$$\begin{array}{r} 3x + 4 = x + 16 \\ \underline{-x \quad -x} \\ 2x + 4 = 16 \\ \underline{-4 \quad -4} \\ 2x = 12 \\ \underline{2 \quad 2} \\ x = 6 \end{array}$$

6 = the smallest even integer.
 $6 + 2 = 8$ = the second even integer.
 $6 + 4 = 10$ = the third even integer.

6, 8, and 10