

Consecutive Integer Problems

First you must know that consecutive integers are things like 5, 6, 7, or things like -18, -17, -16. Note that consecutive integers differ by one. Thus, if you had three consecutive integers and you called the

First integer x

Second integer $x+1$

Third integer $x+2$

Next, you must know what consecutive even integers are things like 24, 26, and 28 while consecutive odd integers are things like 9, 11, and 13. In both cases, the integers are SEPARATED by 2 units. Thus, three consecutive odd integers and consecutive even integers can be both represented by

First ODD x

Second ODD $x+2$

Third ODD $x+4$

First EVEN x

Second EVEN $x+2$

Third EVEN $x+4$

Once you see which type of consecutive integer you have, you can translate to get an equation. Then you solve the equation and last answer the question.

Example 1

Five times the smallest of three consecutive odd integers is seven more than twice the largest. Find the largest integer.

Solution:

First, note that three consecutive odd integers can be written as x , $x+2$, $x+4$ where x is the smallest, $x+2$ is the middle number, and $x+4$ is the largest. Now, translating we see that

$$5(x) = 7 + 2(x+4)$$

Solving, you get $x = 5$.

Thus, the three consecutive odd integers are 5, 7, 9. The question asks for the largest so the answer is 9.

- 1) Five times the second of three consecutive even integers is six more than twice the sum of the first and third integers. Find the middle even integer.
- a) 8 b) 4 c) 6 d) 10
- 2) Three times the second of three consecutive even integers is twelve less than twice the sum of the first and third integers. Find the largest even integer.
- a) 10 b) 16 c) 14 d) 12
- 3) Five times the second of three consecutive odd integers is thirteen less than three times the sum of the first and third integers. Find the largest odd integer.
- a) 9 b) 11 c) 15 d) 13
- 4) The sum of three consecutive even integers is negative forty-eight. Find the smallest integer.
- a) -16 b) -12 c) -18 d) -14
- 5) Find two consecutive even integers such that five times the first equals ten more than three times the second.
- a) 12 and 14 b) 10 and 12 c) 8 and 10 d) 4 and 6
- 6) Five times the first of three consecutive even integers is four less than three times the third integer. Find the smallest even integer.
- a) 6 b) 10 c) 4 d) 8
- 7) Four times the smallest of three consecutive integers is three more than three times the largest. Find the middle integer.
- a) 12 b) 11 c) 10 d) 9