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Online Homework

Focused Exercises for Math SAT

Skill Set 23: Consecutive Integer Problems

Many of the problems in this exercise set came from The College Board, writers of the SAT exam.

1. The least integer of a set of consecutive integers is -25. If the sum of these integers is 26, how many integers are in this set?

   (A) 25
   (B) 26
   (C) 50
   (D) 51
   (E) 52

2. The sum of 5 consecutive integers is 1,000. What is the value of the greatest of these integers?

3. The lengths of the sides of a right triangle are consecutive even integers, and the length of the shortest side is x. Which of the following equations could be used to find x ?

   (A) $x + x + 1 = x + 2$
   (B) $x^2 + (x + 1)^2 = (x + 2)^2$
   (C) $x^2 + (x + 2)^2 = (x + 4)^2$
   (D) $x + x + 2 = x + 4$
   (E) $x^2 = (x + 2)(x + 4)$

4. The median of a set of 9 consecutive integers is 42. What is the greatest of these 9 integers?

5. If the sum of the consecutive integers from -22 to x, inclusive, is 72, what is the value of x ?

   (A) 23
   (B) 25
   (C) 50
   (D) 75
   (E) 94

6. What is the greatest of 5 consecutive integers if the sum of these integers equals 185?

7. The sum of three consecutive odd integers is 111.

If n represents the least of the three integers, which of the following equations represents the statement above?

(A) $3n = 111$
(B) $3n + 2 = 111$
(C) $3n + 4 = 111$
(D) $3n + 6 = 111$
(E) $3n + 9 = 111$

8. Set I contains six consecutive integers. Set J contains all integers that result from adding 3 to each of the integers in set I and also contains all integers that result from subtracting 3 from each of the integers in set I. How many more integers are there in set J than in set I ?

(A) 0
(B) 2
(C) 3
(D) 6
(E) 9

9. If n is an even integer greater than 2, what is the next greater even integer in terms of n ?

(A) $n + 1$
(B) $n + 2$
(C) $n + 3$
(D) $2n$
(E) n^2

10. If e, f, g, and h are consecutive odd integers and $e < f < g < h$, then $g + h$ is how much greater than $e + f$?

(A) 2
(B) 3
(C) 4
(D) 5
(E) 8

11. Which of the following is equal to the sum of two consecutive even integers?

(A) 144
(B) 146
(C) 147
(D) 148
(E) 149

12. Ten consecutive integers are arranged in order from least to greatest. If the sum of the first five integers is 200, what is the sum of the last five integers?

13. The integer 33 is to be expressed as a sum of n consecutive positive integers. The value of n could be which of the following?

I. 2
II. 3
III. 6

(A) I only
(B) II only
(C) I and II only
(D) I and III only
(E) I, II, and III

14. $-3, -2, -1, 0, 1, 2, 3$

How many distinct sums can be obtained by adding any two different numbers shown above?

(A) 7
(B) 11
(C) 13
(D) 15
(E) 21

15. *S* is the sum of the first 100 consecutive positive even integers, and *T* is the sum of the first 100 consecutive positive integers. *S* is what percent greater than *T* ?

(A) 100%
(B) 50%
(C) 10%
(D) 2%
(E) 1%