Answer on Question #58526 – Math – Algebra

Question

-10-16-22-...-6004

Solution

The elements -10, -16, -22, …, -6004 form the arithmetic sequence (or the arithmetic progression). So we have to find the sum of arithmetic sequence. At first we calculate the common difference of arithmetic sequence d as

$$d = a_{n+1} - a_n = -16 - (-10) = -6;$$

and the number n of terms of the arithmetic sequence using the formula

$$a_n = a_1 + d(n-1),$$

hence

$$n = \frac{a_n - a_1 + d}{d} = \frac{-6004 - (-10) + (-6)}{-6} = 1000.$$

Now we can find the result of -10-16-22-...-6004 using the formula for the sum of arithmetic sequence:

$$S_n = \frac{a_1 + a_n}{2} \cdot n = \frac{-10 + (-6004)}{2} \cdot 1000 = -3007 \cdot 1000 = -3007000.$$

Answer: $-3007000.$