NCERT Mathematics Ex 5.3 Q8

EE23BTECH11059 - Tejas

QUESTION 8:

Find the sum of first 51 terms of an AP whose second and third terms are 14 and 18 respectively.

Given : $a_2=14$, $a_3=18$

$$a + d = 14 \quad (1)$$
$$a + 2d = 18 \quad (2)$$

After solving (1) and (2)

$$d = 4 \quad (3)$$
$$a = 10 \quad (4)$$

To find the sum till 51 terms:

$$S_{51} = \frac{51}{2}[(2)(4) + (50)(4)]$$
$$S_{51} = \frac{51}{2}[208]$$
$$\boxed{S_{51} = 5304} \quad (5)$$