



Arithmetic Progressions Ex 19.4 Q8

The required series is 85, 90, 95, ..., 715

Let there be n terms in the A.P

Then,

$$n\text{th term} = 715$$

$$715 = 85 + (n - 1) 5$$

$$n = 127$$

Then,

$$S_n = \frac{n}{2}[a + l]$$

$$\begin{aligned} S_{127} &= \frac{127}{2}[85 + 715] \\ &= 50800 \end{aligned}$$

Arithmetic Progressions Ex 19.4 Q9

The series of integers divisible by 7 between 50 and 500 are

56, 63, 70, ..., 497

Let the number of terms be n then, n th term = 497

$$a_n = a + (n - 1)d$$

$$\Rightarrow 497 = 56 + (n - 1)7$$

$$\Rightarrow n = 64$$

$$\text{The sum } S_n = \frac{n}{2}[a + l]$$

$$\begin{aligned} \Rightarrow S_{64} &= \frac{64}{2}[56 + 497] \\ &= 32 \times 553 \\ &= 17696 \end{aligned}$$

Arithmetic Progressions Ex 19.4 Q10

All even integers will have common difference = 2

∴ A.P is 102, 104, 106, ..., 998

$$t_n = a + (n - 1)d$$

$$t_n = 998, a = 102, d = 2$$

$$998 = 102 + (n - 1)(2)$$

$$998 = 102 + 2n - 2$$

$$998 - 100 = 2n$$

$$2n = 898$$

$$n = 449$$

S_{449} can be calculated by

$$\begin{aligned} S_n &= \frac{n}{2}[a + l] \\ &= \frac{449}{2}[102 + 998] \\ &= \frac{449}{2} \times 1100 \\ &= 449 \times 550 \\ &= 246950 \end{aligned}$$

Arithmetic Progressions Ex 19.4 Q11

The series formed by all the integers between 100 and 550 which are divisible by 9 is
108, 117, 123, ..., 549

Let there be n terms in the A.P then, the n th term is 549

$$549 = a + (n - 1)d$$

$$549 = 108 + (n - 1)9$$

$$\Rightarrow n = 50$$

Then,

$$S_n = \frac{n}{2}[a + l]$$

$$\begin{aligned} S_{50} &= \frac{50}{2}[108 + 549] \\ &= 16425 \end{aligned}$$

*****END*****