Arithematic Progressions Ex 19.4 Q8

The required series is $85, 90, 95, \ldots, 715$

Let there be n terms in the A.P

Then,

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

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

$$n = 127$$

Then,

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

$$S_{127} = \frac{127}{2}[85 + 715]$$

$$= 50800$$

Arithematic Progressions Ex 19.4 Q9

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

$$56, 63, 70, \ldots, 497$$

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

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

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

$$\Rightarrow \quad n = 64$$

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

$$\Rightarrow \quad S_{64} = \frac{64}{2}[56 + 497]$$

$$= 32 \times 553$$

$$= 17696$$

Arithematic 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

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

$$= \frac{449}{2}[102 + 998]$$

$$= \frac{449}{2} \times 1100$$

$$= 449 \times 550$$

$$= 246950$$

Arithematic 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 nth term is 549

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

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

⇒ $n = 50$

Then,

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

$$S_{50} = \frac{50}{2}[108 + 549]$$

$$= 16425$$

********** END *********