



Arithmetic Progressions Ex 19.7 Q15(ii)

A man accepts a position with an initial salary of Rs.5200 per month.

$$a_1 = 5200$$

Man will receive an automatic increase of Rs.320.

$$d = 320$$

Man's salary for the n^{th} month is given by,

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

Total earnig of the man for the first year

$$= \frac{12}{2} [a_1 + a_{12}]$$

$$= 6 [5200 + 5200 + (12-1)320]$$

$$= 83520$$

Total earnig of the man for the first year is Rs. 83,520.

Arithmetic Progressions Ex 19.7 Q16

Suppose the man saved Rs. x in the first year

$$a_1 = x$$

In each succeeding year after the first year man saved Rs 200 more than what he saved in the previous year.

$$d = 200$$

Man saved Rs. 66000 in 20 years.

$$S = 66000$$

$$\frac{20}{2} [a_1 + a_1 + (20-1)200] = 66000$$

$$a_1 + 1900 = 3300$$

$$a_1 = 1400$$

Man saved Rs 1400 in the first year.

Arithmetic Progressions Ex 19.7 Q17

Suppose the award increases by Rs. x .

$$d = x$$

In cricket team tournament 16 teams participated.

$$n = 16$$

The last place team is awarded Rs. 275 in prize money

$$a_1 = 275$$

Sum of Rs. 8000 is to be awarded as prize money

$$S = 8000$$

$$\frac{16}{2}[a_1 + a_1 + (16 - 1)x] = 8000$$

$$2a_1 + 15x = 1000$$

$$550 + 15x = 1000$$

$$15x = 450$$

$$x = 30$$

The amount received by first place team

$$= a_{16}$$

$$= a_1 + (16 - 1)d$$

$$= 275 + 15 \times 30$$

$$= 275 + 450$$

$$= 725$$

The amount received by first place team is Rs. 725.

***** END *****