Arithematic 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.

Arithematic 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 then 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.

Arithematic 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
$S = 8000$

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

$$2a_1 + 15x = 1000$$

$$550 + 15x = 1000$$

$$15x = 450$$

$$x = 30$$

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 **********