Matric No - 19/SCI05/002
Name :- Arowolo Gbemisol - Convenant
Dept :- Microbiology
College :- of Sciences
Course Code :- Mat 101

Mat 101 Assignment

Number No 2

Find the sum of all the terms in the arithmetic progression
180, 175, 170, ---- 25

Solution

The Common difference = -5
The number of terms is

$$180 - \frac{25 + 1}{5} = 32$$

The average terms is the same as the average of first and last terms

$$\frac{180 + 25}{5} = \frac{205}{2}$$

∴ Sum of the series is

$$\cancel{32}^{16} \times \frac{205}{2} = 16 \times 205 = 3280$$

No 3

Form an equation whose root are $\frac{1}{2}$ and $\frac{3}{2}$

Solution

Sum of roots

$\frac{1}{2}$ and $\frac{3}{2}$

$\frac{1}{2} + \left(\frac{3}{2}\right)$

$\frac{1}{2} + \frac{3}{2}$

$$\frac{1+3}{2} = \frac{4}{2} = 2$$

Sum of roots = $\frac{2}{1}$

Product of roots = $\frac{1}{4} \times \frac{3}{1}$

$= \frac{3}{4}$

Therefore eqn (i)

$x^2 - 2x + \frac{3}{4} = 0$

multiply through by 4

$4x^2 - 8x + 3 = 0$

No 1

$a = -10$ eqn (ii)

$a + 14d = 11$ ... (i)

$l = 41$ ... (iii)

$-10 + 14d = 11$

$d = \frac{11 + 10}{14} = \frac{21}{14} = \frac{3}{2}$

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

$41 = -10 + (n-1)\frac{3}{2}$

$41 + 10 = (n-1)d$

$\frac{51}{d} = n - 1$

$\frac{51}{1} \times \frac{2}{3} = n - 1$

$\therefore 34 = n - 1$

$n = 34 + 1 = 35$