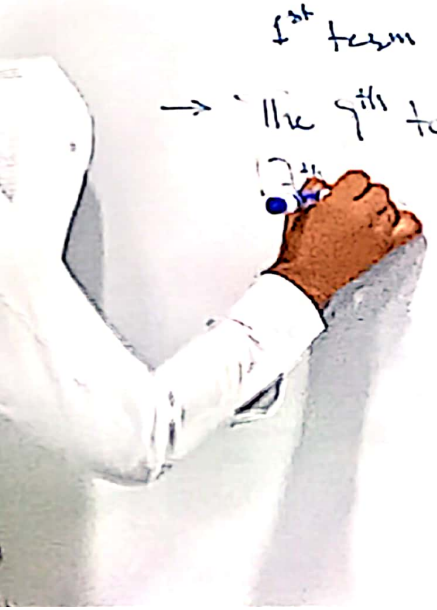
Sequence:-

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

a_n : n^{th} term, a_1 : 1^{st} term, d : difference

→ If the 12^{th} term of A.P is 19 and 17^{th} term is 29. Find the 1^{st} term and common difference?

→ The 9^{th} term of A.P is 30 and



Sequence:-

→ If the 12th term of A.P is 19 and 17th term is 29, find the 1st term and common difference?

→ The 9th term of A.P is 30 and 17th term is 52. Find the 1st three terms.

→ Find the sequence whose nth term is $4n+5$.

$-3, -1, 1, \ldots$

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

a_n: nth term, a_1: 1st term, d: difference

$a_2 = -3 + (2-1)(2) = -3+2 = -1$

$a_3 = -3 + (3-1)(2) = -3+4 = 1$

$a_{12} = a_1 + (12-1)d$

$19 = a_1 + 11d \longrightarrow i$

$a_{17} = a_1 + (17-1)d$

$29 = a_1 + 16d \longrightarrow ii$

$a_1 + 11d = 19$

$a_1 + 16d = 29$

$$\begin{bmatrix} 1 & 11 \\ 1 & 16 \end{bmatrix} \begin{bmatrix} a_1 \\ d \end{bmatrix} = \begin{bmatrix} 19 \\ 29 \end{bmatrix}$$

A X B

$X = A^{-1}B$

$|A| = 16 - 11 = 5$

$\text{Adj}A = \begin{bmatrix} 16 & -11 \\ -1 & 1 \end{bmatrix}$

$A^{-1} = \frac{1}{5}\begin{bmatrix} 16 & -11 \\ -1 & 1 \end{bmatrix}$

$X = A^{-1}B = \frac{1}{5}\begin{bmatrix} 16 & -11 \\ -1 & 1 \end{bmatrix}\begin{bmatrix} 19 \\ 29 \end{bmatrix}$

$= \frac{1}{5}\begin{bmatrix} 304 - 319 \\ -19 + 29 \end{bmatrix}$

$= \frac{1}{5}\begin{bmatrix} -15 \\ 10 \end{bmatrix} \Rightarrow \begin{bmatrix} -3 \\ 2 \end{bmatrix}$

$\begin{bmatrix} a_1 \\ d \end{bmatrix} =$