

Q.No.1 i) $a_1 = 5$ and other three

consecutive terms are 23, 26, 29

Since $a_1 = 5$ & $d = 26 - 23 = 3$

Now $a_2 = a_1 + d = 5 + 3 = 8$

$a_3 = a_2 + d = 8 + 3 = 11$

$a_4 = a_3 + d = 11 + 3 = 14$

hence 5, 8, 11, 14 are first four terms of A.P

————— x —————

Q.No.2 (i) $a_5 = 17$ and $a_9 = 37$

Consider a_1 be the first term and 'd' be the common difference.

Since $a_5 = 17$

$\Rightarrow a_1 + (5-1)d = 17$

$\Rightarrow a_1 + 4d = 17$ ——— (i)

also $a_9 = 37$

$\Rightarrow a_1 + (9-1)d = 37$

$\Rightarrow a_1 + 8d = 37$ ——— (ii)

Subtracting (i) and (ii)

$a_1 + 4d = 17$

$a_1 + 8d = 37$

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$-4d = -20$

$\Rightarrow d = 5$

putting value of d in (i)

$a_1 + 4(5) = 17$

$\Rightarrow a_1 + 20 = 17$

$\Rightarrow a_1 = 17 - 20 = -3$

$\Rightarrow a_1 = -3$

So $a_2 = a_1 + d = -3 + 5 = 2$

$a_3 = a_2 + d = 2 + 5 = 7$

$a_4 = a_3 + d = 7 + 5 = 12$

hence -3, 2, 7, 12 are first four terms of A.P.

iii) $3a_7 = 7a_4$ & $a_{10} = 33$

Suppose a_1 be the first term and d be the common difference

Since $3a_7 = 7a_4$

$\Rightarrow 3(a_1 + 6d) = 7(a_1 + 3d)$

$\Rightarrow 3a_1 + 18d = 7a_1 + 21d$

$\Rightarrow 3a_1 + 18d - 7a_1 - 21d = 0$

$\Rightarrow -4a_1 - 3d = 0$

$\Rightarrow 4a_1 + 3d = 0$ ——— (i)

also $a_{10} = 33$

$\Rightarrow a_1 + 9d = 33$ ——— (ii)

Multiplying eq. (ii) by 4 & subtracting from (i)

$4a_1 + 3d = 0$

$4a_1 + 36d = 132$

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$-33d = -132$

$\Rightarrow d = \frac{-132}{-33} = 4$

putting value of d in (ii)

$a_1 + 9(4) = 33$

$\Rightarrow a_1 + 36 = 33$

$\Rightarrow a_1 = 33 - 36 \Rightarrow a_1 = -3$

So $a_2 = a_1 + d = -3 + 4 = 1$

$a_3 = a_2 + d = 1 + 4 = 5$

$a_4 = a_3 + d = 5 + 4 = 9$

hence -3, 1, 5, 9 are the first four terms of A.P.

————— x —————

Q.No.2 $a_{n-3} = 2n - 5$

$\Rightarrow a_{n-3} = 2n - 6 + 1$

$= 2(n-3) + 1$

Replacing $n-3$ by n.

$a_n = 2n + 1$

Answer