



Arithmetic Progressions Ex 9.3 Q3

Answer :

In the given problem, we are given an A.P and the value of one of its term.
We need to find whether it is a term of the A.P or not.

So here we will use the formula, $a_n = a + (n-1)d$

(i) Here, A.P is 7,10,13,....

$$a_n = 68$$

$$a = 7$$

Now,

$$\text{Common difference } (d) = a_1 - a$$

$$= 10 - 7$$

$$= 3$$

Thus, using the above mentioned formula, we get,

$$68 = 7 + (n-1)3$$

$$68 - 7 = 3n - 3$$

$$61 + 3 = 3n$$

$$n = \frac{64}{3}$$

Since, the value of n is a fraction.

Thus, 68 is not the term of the given A.P

Therefore the answer is **NO**

(ii) Here, A.P is 3,8,13,....

$$a_n = 302$$

$$a = 3$$

Now,

$$\begin{aligned}\text{Common difference } (d) &= a_1 - a \\ &= 8 - 3 \\ &= 5\end{aligned}$$

Thus, using the above mentioned formula, we get,

$$\begin{aligned}302 &= 3 + (n-1)5 \\ 302 - 3 &= 5n - 5 \\ 299 &= 5n \\ n &= \frac{299}{5}\end{aligned}$$

Since, the value of n is a fraction.

Thus, 302 is not the term of the given A.P

Therefore the answer is **NO**

(iii) Here, A.P is 11, 8, 5, 2,

$$\begin{aligned}a_n &= -150 \\ a &= 11\end{aligned}$$

Now,

$$\begin{aligned}\text{Common difference } (d) &= a_1 - a \\ &= 8 - 11 \\ &= -3\end{aligned}$$

Thus, using the above mentioned formula

$$\begin{aligned}-150 &= 11 + (n-1)(-3) \\ -150 - 11 &= -3n + 3 \\ -161 - 3 &= -3n \\ n &= \frac{-164}{-3}\end{aligned}$$

Since, the value of n is a fraction.

Thus, -150 is not the term of the given A.P

Therefore, the answer is **NO**

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