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,

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 $\boxed{\text{NO}}$

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

$a_n = 302$

$a = 3$

Now,

Common difference (d) = $a_1 - a$

$= 8 - 3$

$= 5$

Thus, using the above mentioned formula, we get,

$$302 = 3 + (n-1)5$$

$$302 - 3 = 5n - 5$$

$$299 = 5n$$

$$n = \frac{299}{5}$$

Since, the value of n is a fraction.

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

Therefore the answer is $\boxed{\text{NO}}$

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

$a_n = -150$

$a = 11$

Now,

Common difference (d) = $a_1 - a$

$= 8 - 11$

$= -3$

Thus, using the above mentioned formula

$$-150 = 11 + (n-1)(-3)$$

$$-150 - 11 = -3n + 3$$

$$-161 - 3 = -3n$$

$$n = \frac{-164}{-3}$$

Since, the value of n is a fraction.

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

Therefore, the answer is $\boxed{\text{NO}}$

********** END **********