Arithmetic Progressions Ex 9.2 Q1

Answer :

In the given problem, we need to write the first term (a) and the common difference (d) of the given A.P

(i) −5, −1, 3, 7 ...

Here, first term of the given A.P is (a) = −5

Now, we will find the difference between the two terms of the given A.P

$a_2 - a_1 = -1 - (-5)$

$a_2 - a_1 = 4$

Similarly,

$a_3 - a_2 = 3 - (-1)$

$a_3 - a_2 = 4$

$a_4 - a_3 = 7 - 3$ Also,

$a_4 - a_3 = 4$

As $a_2 - a_1 = a_3 - a_2 = a_4 - a_3 = 4$

Therefore, the first term of the given A.P is $\boxed{a = -5}$ and the common difference of the given is $\boxed{d = 4}$

(ii) $\frac{1}{5}, \frac{3}{5}, \frac{5}{5}, \frac{7}{5}, \ldots\ldots$

Here, first term of the given A.P is (a) = $\frac{1}{5}$

Now, we will find the difference between the two terms of the given A.P

$a_2 - a_1 = \frac{3}{5} - \frac{1}{5}$

$a_2 - a_1 = \frac{2}{5}$

Similarly,

$a_3 - a_2 = \frac{5}{5} - \frac{3}{5}$

$a_3 - a_2 = \frac{2}{5}$

Also,

$a_4 - a_3 = \frac{7}{5} - \frac{5}{5}$

$a_4 - a_3 = \frac{2}{5}$

As $a_2 - a_1 = a_3 - a_2 = a_4 - a_3 = \frac{2}{5}$

Therefore, the first term of the given A.P is $\boxed{a = \frac{1}{5}}$ and the common difference is $\boxed{d = \frac{2}{5}}$

(iii) 0.3, 0.55, 0.80, 1.05, ...

Here, first term of the given A.P is (a) = 0.3

Now, we will find the difference between the two terms of the given A.P

$a_2 - a_1 = 0.55 - 0.3$

$a_2 - a_1 = 0.25$

Similarly,

$a_3 - a_2 = 0.80 - 0.55$

$a_3 - a_2 = 0.25$

Also,

$a_4 - a_3 = 1.05 - 0.80$

$a_4 - a_3 = 0.25$

As $a_2 - a_1 = a_3 - a_2 = a_4 - a_3 = 0.25$

Therefore, the first term of A.P is $\boxed{a = 0.3}$ and the common difference is $\boxed{d = 0.25}$

(iv) −1.1, −3.1, −5.1, −7.1...

Here, first term of the given A.P is (*a*) = −1.1

Now, we will find the difference between the two terms of the given A.P

$a_2 - a_1 = -3.1 - (-1.1)$

$a_2 - a_1 = -2$

Similarly,

$a_3 - a_2 = -5.1 - (-3.1)$

$a_3 - a_2 = -2$

Also,

$a_4 - a_3 = -7.1 - (-5.1)$

$a_4 - a_3 = -2$

As $a_2 - a_1 = a_3 - a_2 = a_4 - a_3 = -2$

Therefore, the first term of A.P is $\boxed{a = -1.1}$ and the common difference is $\boxed{d = -2}$

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