



$$(vi) \ a_n = \frac{n(n-2)}{2}$$

Here, the n^{th} term is given by the above expression. So, to find the first term we use $n = 1$, we get,

$$\begin{aligned} a_1 &= \frac{1(1-2)}{2} \\ &= \frac{-1}{2} \end{aligned}$$

Similarly, we find the other four terms,

Second term ($n = 2$),

$$\begin{aligned} a_2 &= \frac{2(2-2)}{2} \\ &= \frac{2(0)}{2} \\ &= 0 \end{aligned}$$

Third term ($n = 3$),

$$\begin{aligned} a_3 &= \frac{3(3-2)}{2} \\ &= \frac{3(1)}{2} \\ &= \frac{3}{2} \end{aligned}$$

Fourth term ($n = 4$),

$$\begin{aligned} a_4 &= \frac{4(4-2)}{2} \\ &= \frac{4(2)}{2} \\ &= \frac{8}{2} \\ &= 4 \end{aligned}$$

Fifth term ($n = 5$),

$$\begin{aligned} a_5 &= \frac{5(5-2)}{2} \\ &= \frac{5(3)}{2} \\ &= \frac{15}{2} \end{aligned}$$

Therefore, the first five terms for the given sequence are $a_1 = \frac{-1}{2}, a_2 = 0, a_3 = \frac{3}{2}, a_4 = 4, a_5 = \frac{15}{2}$.

$$(vii) \ a_n = n^2 - n + 1$$

Here, the n^{th} term is given by the above expression. So, to find the first term we use $n = 1$, we get,

$$\begin{aligned} a_1 &= (1)^2 - (1) + 1 \\ &= 1 - 1 + 1 \\ &= 1 \end{aligned}$$

Similarly, we find the other four terms,

Second term ($n = 2$),

$$\begin{aligned} a_2 &= (2)^2 - (2) + 1 \\ &= 4 - 2 + 1 \end{aligned}$$

$$= 3$$

Third term ($n = 3$),

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

$$= 9 - 3 + 1$$

$$= 7$$

Fourth term ($n = 4$),

$$a_4 = (4)^2 - (4) + 1$$

$$= 16 - 4 + 1$$

$$= 13$$

Fifth term ($n = 5$),

$$a_5 = (5)^2 - (5) + 1$$

$$= 25 - 5 + 1$$

$$= 21$$

Therefore, the first five terms for the given sequence are $a_1 = 1, a_2 = 3, a_3 = 7, a_4 = 13, a_5 = 21$.

$$(viii) a_n = 2n^2 - 3n + 1$$

Here, the n^{th} term is given by the above expression. So, to find the first term we use $n = 1$, we get,

$$a_1 = 2(1)^2 - 3(1) + 1$$

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

$$= 2 - 3 + 1$$

$$= 0$$

Similarly, we find the other four terms,

Second term ($n = 2$),

$$\begin{aligned}a_2 &= 2(2)^2 - 3(2) + 1 \\&= 2(4) - 6 + 1 \\&= 8 - 6 + 1 \\&= 3\end{aligned}$$

Third term ($n = 3$),

$$\begin{aligned}a_3 &= 2(3)^2 - 3(3) + 1 \\&= 2(9) - 9 + 1 \\&= 18 - 9 + 1 \\&= 10\end{aligned}$$

Fourth term ($n = 4$),

$$\begin{aligned}a_4 &= 2(4)^2 - 3(4) + 1 \\&= 2(16) - 12 + 1 \\&= 32 - 12 + 1 \\&= 21\end{aligned}$$

Fifth term ($n = 5$),

$$\begin{aligned}a_5 &= 2(5)^2 - 3(5) + 1 \\&= 2(25) - 15 + 1 \\&= 50 - 15 + 1 \\&= 36\end{aligned}$$

Therefore, the first five terms for the given sequence are $a_1 = 0, a_2 = 3, a_3 = 10, a_4 = 21, a_5 = 36$.

$$(ix) a_n = \frac{2n-3}{6}$$

Here, the n^{th} term is given by the above expression. So, to find the first term we use $n = 1$, we get,

$$\begin{aligned} a_1 &= \frac{2(1)-3}{6} \\ &= \frac{2-3}{6} \\ &= \frac{-1}{6} \end{aligned}$$

Similarly, we find the other four terms,

Second term ($n = 2$),

$$\begin{aligned} a_2 &= \frac{2(2)-3}{6} \\ &= \frac{4-3}{6} \\ &= \frac{1}{6} \end{aligned}$$

Third term ($n = 3$),

$$\begin{aligned} a_3 &= \frac{2(3)-3}{6} \\ &= \frac{6-3}{6} \\ &= \frac{3}{6} \\ &= \frac{1}{2} \end{aligned}$$

Fourth term ($n = 4$),

$$\begin{aligned} a_4 &= \frac{2(4)-3}{6} \\ &= \frac{8-3}{6} \\ &= \frac{5}{6} \end{aligned}$$

Fifth term ($n = 5$),

$$\begin{aligned} a_5 &= \frac{2(5)-3}{6} \\ &= \frac{10-3}{6} \\ &= \frac{7}{6} \end{aligned}$$

Therefore, the first five terms of the given A.P are

$$a_1 = \frac{-1}{6}, a_2 = \frac{1}{6}, a_3 = \frac{1}{2}, a_4 = \frac{5}{6}, a_5 = \frac{7}{6}$$

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