



Exercise 11D

Question 6:

$$n^{\text{th}} \text{ term of AP} = T_n = 7 - 4n$$

$$\text{put } n = 1, \quad T_1 = 7 - 4 = 3$$

$$\text{put } n = 2, \quad T_2 = 7 - 4 \times 2 = 7 - 8 = -1$$

$$\text{Common difference} = T_2 - T_1 = -1 - 3 = -4$$

Question 7:

First term of AP = $a = p$

Common difference = $d = q$

$$n^{\text{th}} \text{ term} = a + (n - 1)d$$

$$10^{\text{th}} \text{ term} = p + (10 - 1)q$$

$$= p + 9q$$

Question 8:

$$\text{The term AP is } \sqrt{8}, \sqrt{18}, \sqrt{32} \dots$$

$$\text{or } 2\sqrt{2}, 3\sqrt{2}, 4\sqrt{2} \dots$$

$$\text{common difference} = 3\sqrt{2} - 2\sqrt{2} = \sqrt{2}$$

$$\text{Next term} = 4\sqrt{2} + \sqrt{2} = 5\sqrt{2} = \sqrt{25 \times 2} = \sqrt{50}$$

Question 9:

$$\text{The given AP is } \sqrt{2}, \sqrt{8}, \sqrt{18}, \dots \text{ or } \sqrt{2}, 2\sqrt{2}, 3\sqrt{2} \dots$$

$$\text{Common difference } d = 2\sqrt{2} - \sqrt{2} = \sqrt{2}$$

$$\text{Term next to } 3\sqrt{2} = 3\sqrt{2} + d = 3\sqrt{2} + \sqrt{2} = 4\sqrt{2} = \sqrt{16 \times 2} = \sqrt{32}$$

Question 10:

The given AP is 21, 18, 15,

First term = 21, common difference = $18 - 21 = -3$

Let n^{th} term be zero

$$a + (n - 1)d = 0 \text{ or } 21 + (n - 1)(-3) = 0$$

$$21 - 3n + 3 = 0$$

$$3n = 24$$

$$\text{or } n = 8$$

Hence, 8^{th} term of given series is 0

***** END *****