



Exercise 11A

Question 21:

First AP is 63, 65, 67,....

First term = 63, common difference = $65 - 63 = 2$

\therefore nth term = $63 + (n - 1) 2 = 63 + 2n - 2 = 2n + 61$

Second AP is 3, 10, 17

First term = 3, common difference = $10 - 3 = 7$

nth term = $3 + (n - 1) 7 = 3 + 7n - 7 = 7n - 4$

The two nth terms are equal

$\therefore 2n + 61 = 7n - 4$ or $5n = 61 + 4 = 65$

$\Rightarrow n = 65/5 = 13.$

Question 22:

Three digit numbers which are divisible by 7 are 105, 112, 119,....994

This is an AP where $a = 105$, $d = 7$ and $l = 994$

Let n^{th} term be 994

$\therefore a + (n - 1)d = 994$ or $105 + (n - 1)7 = 994$

$\Rightarrow 105 + 7n - 7 = 994$ or $7n = 94 - 98 = 896$

$\therefore n = 896/7 = 128.$

Hence, there are 128 three digits number which are divisible by 7.

Question 23:

Here $a = 7$, $d = (10 - 7) = 3$, $l = 184$

And $n = 8$

Now, nth term from the end = $[l - (n-1) d]$

= $[184 - (8-1) 3]$

= $[184 - 7 \times 3]$

= $184 - 21$

= 163

Hence, the 8th term from the end is 163

Question 24:

Here $a = 17$, $d = (14 - 17) = -3$, $l = -40$

And $n = 6$

Now, n^{th} term from the end = $[l - (n - 1) d]$

= $[-40 - (6-1)(-3)]$

= $[-40 + 5 \times 3]$

= $-40 + 15$

= -25

Hence, the 6th term from the end is - 25

Question 25:

The given AP is 10, 7, 4, (-62)

$a = 10$, $d = 7 - 10 = -3$, $l = -62$

Now, 11th term from the end = $[l - (n - 1) d]$

= $[-62 - (11-1)(-3)]$

= $-62 + 30$

= -32

***** END *****