

Ex 5.2

⑪ 3, 15, 27, 39, ...

$$a = 3, d = 15 - 3 = 12$$

$$a_n - a_{54} = 132$$

$$a + (n-1)d - a - 53d = 132$$

$$(n-53)d = 132$$

$$(n-53)12 = 132$$

$$\Rightarrow n = 11 + 54 = 65$$

65th term is 132 more than 54th term

⑫ I AP      II A.P.  
 let  $a = a$        $a = a'$   
 $d = d$        $d = d$

$$a_{100} - a'_{100} = 100$$

$$a + 99d - a' - 99d = 100$$

$$\Rightarrow a - a' = 100 \dots \textcircled{1}$$

$$a_{1000} - a'_{1000}$$

$$= a + 999d - a' - 999d$$

$$= 100 \text{ (using i)}$$

⑬ Three digit nos div. by 7 are

$$105, 112, 119, \dots, 994$$

$$a = 105, d = 112 - 105 = 7$$

$$a_n = 994$$

$$a + (n-1)d = 994$$

$$105 + (n-1)7 = 994$$

$$(\div 7)$$

$$15 + n - 1 = 142$$

$$\Rightarrow n + 14 = 142$$

$$\Rightarrow n = 142 - 14 = 128$$

$\therefore$  no. of three digit nos div. by 7 is 128

⑭ Multiples of 4 between 10 and 250 are

$$12, 16, 20, \dots, 248$$

$$a = 12, d = 16 - 12 = 4$$

$$a_n = 248$$

$$a + (n-1)d = 248$$

$$12 + (n-1)4 = 248$$

$$(\div 4) \quad 3 + n - 1 = 62$$

$$\Rightarrow n + 2 = 62$$

$$\Rightarrow n = 60$$