

①  $d = -4, m = 7, a_m = 4$

$a_7 = 4$

$a + 6d = 4$

$a + 6(-4) = 4$

$\Rightarrow a = 4 + 24$

$\Rightarrow a = 28$  (D)

②  $a = 3.5, d = 0, m = 101$

$a_m = a + (m-1)d$

$a_{101} = 3.5 + 100 \times 0$   
 $= 3.5$  (B)

③  $-10, -6, -2, 2, \dots$

$a_2 - a_1 = -6 + 10$   
 $= 4$

$a_3 - a_2 = -2 + 6$   
 $= 4$

$a_4 - a_3 = 2 + 2$   
 $= 4$

AP with  $d = 4$  (B)

④  $-5, -\frac{5}{2}, 0, \frac{5}{2}$

$a = -5, d = -\frac{5}{2} + 5$   
 $= \frac{-5 + 10}{2}$   
 $= \frac{5}{2}$

$a_{11} = a + 10d$   
 $= -5 + 10 \times \frac{5}{2}$   
 $= -5 + 25$   
 $= 20$  (B)

⑤  $a = -2, d = -2$

$-2, -2 + (-2), -2 + 2(-2), -2 + 3(-2)$

$= -2, -4, -6, -8$  (C)

⑥  $a = -3, a_2 = 4$

$a_2 = 4$

$a + d = 4$

$-3 + d = 4$

$\Rightarrow d = 7$

$a_{21} = a + 20d$

$= -3 + 20 \times 7$

$= -3 + 140$

$= 137$  (B)

⑦  $a_2 = 13$

$\Rightarrow a + d = 13 \dots \textcircled{1}$

$a_5 = 25$

$\Rightarrow a + 4d = 25 \dots \textcircled{2}$

$\textcircled{2} - \textcircled{1}$

$a + 4d - a - d = 25 - 13$

$\Rightarrow 3d = 12$

$\Rightarrow d = 4$

Sub  $\textcircled{1}$

$a + 4 = 13$

$\Rightarrow a = 13 - 4$

$= 9$

$a_7 = a + 6d$

$= 9 + 6 \times 4$

$= 9 + 24$

$= 33$  (B)