نام نام خانوادگی ..... پاسخنامه تشریحی تکلیف شماره ۱۲ ... کلاس ۲۵

۱

$t_n = 5, 9, 13, 17, \cdots \Rightarrow d = 4$

$t_n = t_1 + (n-1)d = 5 + 4(n-1)$

الف)

$= 5 + 4n - 4 = (4n+1)$

ب)

$t_{10} = 5 + 4(9) = 5 + 36 = 41$

۲

$t_n = 9, 15, 21, \cdots$

$t_n = 9 + 6(n-1)$

$t_{10} = 9 + (6 \times 9) = 63$

الف) ۲۱۵

$S_{10} = \frac{10}{2}(63 + 9) = 360$

ب) ۴ جمله هشتم ... $t_{29}, t_{30}, t_{31}, t_{32}$ ... جمله‌های

$t_{29} + t_{30} + t_{31} + t_{32} = \frac{4}{2}(117 + 120) = 474$

$t_{29} = 9 + (6 \times 18) = 117$

$t_{32} = 9 + (6 \times 20) = 129$

۳

$1+\sqrt{3}, 2, 3-\sqrt{3}, \cdots$

$d = 2 - 1 - \sqrt{3} = 1 - \sqrt{3}$

$d = 3 - \sqrt{3} - 2 = 1 - \sqrt{3}$ ★

$t_{25} - t_{23} = 2d$

$t_1 + 24d - t_1 - 22d = 2d$

★ $2d = 2(1 - \sqrt{3}) = 2 - 2\sqrt{3}$

۴

$a_n = a^{2n}, 2a^n, a^y \longrightarrow a^{2n}, 2a^n, a^y$ دنباله حسابی $\Rightarrow \frac{a+c}{2} = b$

$a^y + a^{2n} = 4a^n$

$a^{2n}(a^{y-2n} + 1) = a^{2n} \times 4$

$b_n = x, 2, y \Rightarrow$

$\begin{cases} x + y = 4 \\ (\star)\ y = 2x + 1 \end{cases} \Rightarrow x + 2x + 1 = 4 \Rightarrow 3x = 3 = (x = 1)$

$y = 2 + 1 = 3$

$xy = 1 \times 3 = 3$

$a^{y-2n} + 1 = 4$

$a^{y-2n} = a^1 \Rightarrow y - 2n = 1$

★ $(y = 2n + 1)$

۵

$2x-4, 2x-1, 4x, \cdots$ دنباله حسابی $\Rightarrow \left(\frac{a+b}{2} = c\right)$

$\frac{8x-4}{2} = 2x - 1 \Rightarrow 4x - 2 = 2x - 1 \Rightarrow$

$2x = 1 \Rightarrow (x = \frac{1}{2})$

$t_1 = 2(\frac{1}{2}) - 4 = 1 - 4 = -3$

$t_2 = 2(\frac{1}{2}) - 1 = 1 - 1 = 0$

$t_3 = 4 \times \frac{1}{2} = 2$

$d = 3 - 0 = (3)$

$t_n = -3 + (n-1)(3) \longrightarrow t_4 = -3 + (3 \times 3) = -3 + 9 = (6)$

Scanned with CamScanner

$a_n = 3 + (n-1)2 = 3 + (19)\times 2 = 41 \leftarrow a_{20}$

$b_n = 2 + (n-1)3 = 2 + (19\times 3) = 59 \leftarrow b_{20}$

$a_n = 3, 5, 7, \dots \rightarrow d = 2$

$b_n = 2, 5, 8, \dots \rightarrow d' = 3$

$\Rightarrow d'' = 2\times 3 = 6$, $t_1 = 5$

۶

۷ جمله مشترک دارند که $C_n =$ → جملات مشترک $41, 35, 29, 23, 17, 11, 5$

$a_1 + a_2 + a_3 = 21 \rightarrow a_1 + a_1 + d + a_1 + 2d = 21 \Rightarrow 3a_1 + 3d = 21 \Rightarrow (a_1 + d = 7)$

$a_1 + a_2 + a_5 = 10 \rightarrow a_1 + a_1 + 2d + a_1 + 4d = 10 \Rightarrow 3a_1 + 6d = 10 \Rightarrow (a_1 + 2d = 5)$

$d = 2$

$a_1 + d = 7$

$a_1 + 2 = 7$

$a_1 = -2$

۷

$a_3 - a_2 + a_1 = a_1 + 2d - a_1 - d + a_1 = a_1 + d = 7$

$a_1 = ? \Rightarrow \frac{7}{-2} \leq -\frac{1}{3}$ بله

$a_1, a_2, a_3, a_4, a_5, \dots$

$a_1 + a_2 + a_3 = 15 \rightarrow a_1 + a_1 + d + a_1 + 2d = 15 \Rightarrow 3a_1 + 3d = 15 \Rightarrow a_1 + d = 5 \xrightarrow{\times -2} -2a_1 - 2d = -10$

$a_4 + a_5 = 25 \rightarrow a_1 + 3d + a_1 + 4d = 25 \Rightarrow 2a_1 + 7d = 25$ ★

$\Rightarrow 5d = 15 \Rightarrow (d = 3)$

$2a_1 + 21 = 25 \rightarrow 2a_1 = 4 \rightarrow (a_1 = 2)$

۸

$a_n = 2 + (n-1)(3) \Rightarrow a_{10} = 2 + (9\times 3) = 27 + 2 = 29$

$S_9 = 9S_3 \Rightarrow \frac{9}{2}(t_1 + t_9) = 9\times\frac{3}{2}(t_1 + t_3) \Rightarrow \frac{9}{2}(2t_1 + 8d) = \frac{9\times 3}{2}(2t_1 + 2d)$

$2t_1 + 8d = 9t_1 + 9d \Rightarrow 2d = 6t_1 \Rightarrow (d = 3t_1) \Rightarrow 2a_1 = d$ ★

$\frac{a_{20}}{a_7} = \frac{a_1 + 19d}{a_1 + 9d} \overset{★}{=} \frac{a_1 + 38a_1}{a_1 + 18a_1} = \frac{39\,a_1}{13\,a_1} = (3)$

۹

$a_1 = 11$, $a_7 = 35$ $\Rightarrow d = \frac{a_7 - a_1}{7 - 1} = \frac{24}{6} = +4$

$a_n = 11 + (n-1)(4) \Rightarrow a_6 = 11 + 12 = (23)$

$b_n = 28 + (n-1)d \Rightarrow b_4 = 28 + 3d$

$28 + 3d = 13 \Rightarrow 3d = -15 \Rightarrow (d = -5)$

جمله چندم $\rightarrow$ $13, 18, 23, 28, 33, 38$

$d = \frac{33 - 38}{m+1} = -5 \rightarrow -25 = -5m - 5$

$-5m = -20 \Rightarrow (m = 4)$

۱۰

حمله ۴ دنباله $\rightarrow$ تعداد دنباله‌ها

حمله دنباله چند تا؟

را بنویسید (چون $d = -5$)