

نام و نام خانوادگی علی حبیبیان پاسخنامه تشریحی تکلیف شماره ۱۲ ... کلاس پسر

$$t_n = 5, 9, 13, 17, \dots$$

الف) $t_{n+C} \rightarrow t_1 = 5 \Rightarrow C = 1 \Rightarrow t_n = 4n + 1$

ب) $t_{10} = 10 \times 4 + 1 = 41$

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$$t_n = 5, 9, 13, 17, \dots \quad S_n = \frac{n}{2} (t_1 + t_n) \rightsquigarrow t_n = 4n + 2$$

الف) $t_1 = 5 \times 1 + 2 = 7 \Rightarrow S_{10} = \frac{10}{2} (7 + 42) = 245$

ب) $4 \times 11 = 44 \rightarrow t_{11} = t_{10+1} \Rightarrow t_{10} = t_{11-1} = t_{10}$

$$\rightarrow \begin{aligned} t_{10} &= 4 \times 10 + 2 = 42 \\ t_{11} &= 4 \times 11 + 2 = 46 \end{aligned} \Rightarrow S_{11} = \frac{11}{2} (7 + 46) = 275$$

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$$t_n = 1 + \sqrt{3}, 2, 3 - \sqrt{3} \rightarrow 2 - (1 + \sqrt{3}) = 1 - \sqrt{3} = d \Rightarrow t_{10} - t_{10-2} = 2d = 2 - 2\sqrt{3}$$

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$$a_n = 5^x, 3 \times 5^x, 5^y \rightsquigarrow (3 \times 5^x) - 5^x = 2 \times 5^x = d \Rightarrow 5^y = 5 \times 5^x \Rightarrow y = x + 1$$

$$b_n = x, y \rightarrow y - x = y - y$$

$$\begin{aligned} \Rightarrow y &= x + 1 \\ y &= -x \end{aligned} \Rightarrow \begin{aligned} x + 1 &= -x \Rightarrow 2x = -1 \Rightarrow x = -\frac{1}{2} \\ y &= \frac{1}{2} \end{aligned} \Rightarrow x \times y = -\frac{1}{4}$$

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$$t_n = 2x - 4, 2x - 1, 5x, \dots$$

$$\begin{aligned} & \xrightarrow{+3} \quad \xrightarrow{+3} \quad \rightarrow 5x - (2x - 1) = 3 \rightarrow 3x = 3 \Rightarrow x = 1 \Rightarrow t_1 = -2 \end{aligned}$$

$$\Rightarrow t_n = 3n - 2 \Rightarrow t_6 = 18 - 2 = 16$$

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$b_n = 2, 5, 8, \dots \text{ و } a_n = 3, 5, 7, \dots$ $b_n = 3n-1 \Rightarrow b_{r_1} = 4-1=3$ $a_n = 2n+1 \Rightarrow a_{r_2} = 5+1=6$ $c_1 = 3 \quad d = 3 \times 2 = 6$ $c_n = 2, 11, 17, \dots$ $c_n = 5n-1$ $c_n \leq 41$ $5n-1 \leq 41$ $5n \leq 42 \Rightarrow n \leq 8$ تعداد جمله مشترک = 8	6
$a_1 + a_r + a_s = 10$ $a_1 + a_r + a_s = 21$ $a_s - a_r = 11$ $r d = 11 \Rightarrow a_1 + a_r + a_s = 3a_1 + r d = 21 \Rightarrow 3a_1 = 21 - 11 = 10 \Rightarrow a_1 = \frac{10}{3}$ $d = 11$ $\Rightarrow a_r - a_s + a_1 = a_1 + r d = \frac{10}{3} + 11 = \frac{43}{3} \Rightarrow \frac{43}{3} = \frac{14}{3} \Rightarrow \frac{29}{3}$	7
$a_1 + a_r + a_s = 3a_1 + r d = 10 \Rightarrow a_1 + d = 10$ $a_5 + a_8 = 2a_1 + 7d = 20 \Rightarrow a_1 + 7d = 10 \Rightarrow 6d = 10 \Rightarrow d = \frac{5}{3}$ $a_1 + d = 10 \Rightarrow a_1 = 10 - d = 10 - \frac{5}{3} = \frac{25}{3}$ $a_{10} = a_1 + 9d = \frac{25}{3} + 9 \times \frac{5}{3} = 40$	8
$S_1 = 3 S_r \quad r(a_1 + a_r + a_s) = a_1 + a_r + \dots + a_1 \Rightarrow d = 0$ $\Rightarrow \frac{a_{r_1}}{a_v} = 1$	9
$a_v = 40 \quad a_1 = 11 \Rightarrow a_v - a_1 = 4d = 29 \Rightarrow d = \frac{29}{4} \Rightarrow a_n = 4n + 11$ $b_1 = 11 \rightarrow b_5 = 23 \Rightarrow b_5 - b_1 = 4d = 12 \Rightarrow d = 3 \Rightarrow b_n = -2n + 23$ $4-1=3 \Rightarrow \text{تعداد واسطه ها} = 3-1=3 \leftarrow \begin{matrix} 5n=40 \\ n=8 \end{matrix}$	10