

الف) $t_n = 4n + 1$ ✓ $t_n = 5, 9, 13, 17, \dots$

ب) $t_{10} = 10 \times 4 + 1 = 41$ ✓

(۲)

الف) مجموع ۱۰ جمله اول
 $t_n = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40$
 مجموع اول و آخر = ۴۴
 مجموع دوم و نهم = ۴۴
 مجموع سوم و هفتم = ۴۴
 مجموع چهارم و ششم = ۴۴

$\frac{n}{2} = (a_n + a_1) = \frac{10}{2} (42 + 4) = 230$ ✓

ب) جمله n ام: $t_n = 4n + 1$
 جمله $n+2$ ام: $t_{n+2} = 4(n+2) + 1 = 4n + 9$

ب) مجموع ۴ جمله هفتم، ششم، پنجم، چهارم
 $t_{10} = 4 \times 10 + 1 = 41$
 $t_{11} = 4 \times 11 + 1 = 45$
 $t_{12} = 4 \times 12 + 1 = 49$
 $t_{13} = 4 \times 13 + 1 = 53$
 $\frac{n}{2} = \frac{4}{2} (41 + 53) = 184$ ✓

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$t_n = 1 + \sqrt{3}, 2, 3 - \sqrt{3} \rightarrow d = 1 - \sqrt{3}$

$t_{10} = 1 + \sqrt{3}, t_{11} = 2, t_{12} = 3 - \sqrt{3} \rightarrow t_{12} - t_{10} = 2d = 2(1 - \sqrt{3}) = 2 - 2\sqrt{3}$ ✓
 اختلاف جمله ۱۲ام و ۱۰ام

(۲)

$a_n = 2^m, 2^m, 2^m, 2^m \rightarrow 2^m \times 2^m = 2^y$
 $2^{2m-1} = 2^y \rightarrow 2m-1 = y$

$xy = 2 \times 1 = 2$ ✓

$b_n = x, 2, y \rightarrow 2 \frac{x+y}{2} \rightarrow x+y = 4$
 $2x - y = -1$
 $\frac{2x+y}{2} = 2$
 $y = 3$
 $x = 2$

(۲)

$2x - 1, m-1, 4m, 4$
 $2x - 1 + 4 = 4m$

$(2x - 1) + 4 = 4m$

$2x + 3 = 4m \rightarrow 4m = 2 \rightarrow m = \frac{1}{2}$

$t_4 = 2x + 3 = 4 \times \frac{1}{2} + 3 = 4$ ✓

(۲)

$a_n = 3, 6, 9, 12 \rightarrow a_n = 3n + 1 \rightarrow 3 \times 20 + 1 = 61$ جواب: 61 ✓
 $b_n = 2, 5, 8, 11 \rightarrow b_n = 3n - 1 \rightarrow 3 \times 20 - 1 = 59$

$2n-1 \rightarrow \left. \begin{array}{l} 4n-1 \leq 41 \rightarrow 4n \leq 42 \rightarrow n \leq 10.5 \\ 4n-1 \leq 49 \rightarrow 4n \leq 50 \rightarrow n \leq 12.5 \end{array} \right\} \Rightarrow n \leq 10$

$$a_1 + a_r + a_n = 11 \rightarrow a_r = 11 - a_1 - a_n = 11 - 1 - 1 = 9 \rightarrow a_r = 9$$

$$a_1 + a_2 + a_3 = 10 \rightarrow a_1 - 10 = a_2 + a_3 + 10 \rightarrow a_2 + a_3 = 10 \rightarrow a_2 = 10 - a_3$$

$$d = a_r - a_r = r\alpha - v = r\lambda$$

$$a_1 = a_r - d = 4.2 - 5.2 = -1 \rightarrow a_r - a_r + a_1 = r d - v - 1 = v - 5 - 1 = -1$$

$$a_1 + a_2 + a_3 = 1d \rightarrow r a_1 + r d = 1d \rightarrow a_1 + d = d$$

$$a_{\varepsilon} + a_{\omega} \pm r\omega \rightarrow ra_i + v\omega = r\omega$$

$$\overbrace{a_1 + r d} = a_1 + r d$$

$$\begin{array}{r} r d \rightarrow v d = r d \\ - r d \rightarrow d = d \\ \hline d d = 1 d \end{array}$$

$$a_{10} = a_1 + 9d = 1 + 9 \cdot 2 = 19 \quad \checkmark$$

$$\begin{cases} d = r \\ a_i = r \end{cases}$$

$$S_g = q S_p \rightarrow q \left(a_1 + a_p \right) = q \times \frac{r}{r} \times (a_1 + a_p) \rightarrow \frac{q}{r} a_1 + \frac{q}{r} a_p = \frac{rv}{r} a_1 + \frac{rv a_p}{r}$$

$$\frac{1}{r_f}(a_1 + Ad) - \frac{r_f}{r_f}(a_1 + rd) = a_1$$

$$\frac{1}{r} a_1 + r d - \frac{r}{r} a_1 - r d = a_1 \rightarrow r a_1 = d \rightarrow \left(a_1 = \frac{1d}{r} \right)$$

$$\frac{a_{r_0}}{a_v} = \frac{a_1 + Ad}{a_1 + qd} = \frac{\frac{r_0}{r} d}{\frac{1r}{r} d} = \frac{r_0}{1r} = r \quad \checkmark$$

$$t_1 = 11, \quad t_v = r_a \rightarrow t_1'' + qd = r_a \Rightarrow 7d = r_f \rightarrow d = f \rightarrow t_f = t_1 + 7d \rightarrow 11 + 7 = 18$$

$$b_1 = 2\Lambda \rightarrow b_7 = 1\mu$$

$$b_{\text{eff}} = t_{\text{eff}} \rightarrow b_{\text{eff}} = r r \quad b_1 + r d = r r \rightarrow r d = r r - b_1 = r \omega$$

$$d = \frac{b_n - b_1}{n+1} \rightarrow -d \quad \frac{14-21}{n+1} \rightarrow -d \quad n = -7 \rightarrow n+1 = -6$$

$n = 4$ واسطی ~~بای~~ ی-تدیی درج ستم