

Subject :

تکلیف دوازدهم

دوره ۱۲

کتاب حساب

Date :

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

$\begin{matrix} & +2 & +2 & +2 \\ \underbrace{5} & \underbrace{9} & \underbrace{13} & \underbrace{17} \end{matrix}$

مسئله ۱

$$t_n = 4n + 1$$

الف)

$$t_{10} = 4 \times 10 + 1 = 41$$

ب)

مسئله ۲

$$t_n = 4, 10, 16, 22, \dots$$

$\begin{matrix} & +6 & +6 & +6 \\ \underbrace{4} & \underbrace{10} & \underbrace{16} & \underbrace{22} \end{matrix}$

الف)

$$t_n = 6n + 2$$

$$d \frac{n}{1} (a_1 + a_n) = 240 \quad 4 \times 10 + 2 = 42$$

$\begin{matrix} 4 & 10 \\ \underbrace{4} & \underbrace{10} \\ 4n \end{matrix}$

$$t_{19} + t_{10} + t_{11} + t_{12} = 5n = \frac{n}{1} (a_1 + a_n) = 4 \quad 2(118 + 130) = 498$$

$\begin{matrix} 19 & 10 & 11 & 12 \\ \underbrace{19} & \underbrace{10} & \underbrace{11} & \underbrace{12} \end{matrix}$

$$t_{19} = 4 \times 19 + 2 = 78 \quad t_{12} = 4 \times 12 + 2 = 50$$

مسئله ۳

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

$\begin{matrix} 1 + \sqrt{3} & 2 & 3 - \sqrt{3} \\ \underbrace{1 + \sqrt{3}} & \underbrace{2} & \underbrace{3 - \sqrt{3}} \end{matrix}$

$$r_3 \quad r_2 \quad r_1$$

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

$$t_{r_2} = 1 + \sqrt{3} + 22(1 - \sqrt{3})$$

$$t_{r_2} = 1 + \sqrt{3} + 22 - 22\sqrt{3}$$

$$t_{r_2} = 23 - 21\sqrt{3}$$

راه اول

$$t_{r_1} = 1 + \sqrt{3} + 22(1 - \sqrt{3})$$

$$t_{r_1} = 1 + \sqrt{3} + 22 - 22\sqrt{3}$$

$$23 - 21\sqrt{3}$$

$$23 - 22\sqrt{3} - (23 - 21\sqrt{3}) =$$

$$23 - 22\sqrt{3} - 23 + 21\sqrt{3} = -\sqrt{3}$$

$$23 - \sqrt{3} - (1 + \sqrt{3})$$

راه دوم

$$23 - \sqrt{3} - 1 - \sqrt{3} = 22 - 2\sqrt{3}$$

Subject :

$$a_n = a^{r\alpha}, r \times a^{r\alpha}, a^y, \dots$$

$$\rightarrow r \times a^{r\alpha} - a^{r\alpha} = a^y - r \times a^{r\alpha}$$

سوال  $r = 1$ 

$$b_n = \alpha, r, y, \dots$$

$$r \times a^{r\alpha} - a^{r\alpha} + r \times a^{r\alpha} = a^y$$

$$a^{r\alpha} (r - 1 + r) = a^y$$

$$\alpha + y = r \quad y = r - \alpha$$

$$y = r\alpha + 1$$

$$r - \alpha = r\alpha + 1$$

$$r\alpha = r \quad \alpha = 1$$

$$y = r + 1 = r$$

$$xy = 1 \times r = \boxed{r}$$

$$a_n = r\alpha - \varepsilon, r\alpha - 1, 9\alpha, \dots$$

سوال  $r = a$ 

$$r\alpha - \varepsilon + 9\alpha = r\alpha - r$$

$$1\alpha - \varepsilon = \varepsilon\alpha - r$$

$$r\alpha = r \quad \alpha = \frac{1}{r}$$

$$-r, 0, r, \dots \quad a_n = 3n - 9$$

$$3 \times \varepsilon - 9 \leq 9$$

سوال  $r = 9$ 

$$a_n = r, 2r, 3r, \dots$$

$$b_n = r, 2r, 3r, \dots$$

$$r(n+1)$$

$$r \times r \times 1 = r$$

$$r(n-1)$$

$$r \times r \times 0 = 0$$

$$a_n = 11a, \dots \quad 4n - 1 \leq 41$$

$$9n \leq 42$$

$$n \leq 4$$

سوال  $r = 11$ 

$$a_1 + a_r + a_r = r$$

$$a_1 + a_r + a_r = 10a$$

$$-a_1 - a_r - a_r = -r$$

$$a_1 + a_r + a_r = r \quad r \times a_r = r$$

$$a_1 + a_r + a_r = 10a$$

$$a_r - a_r = 1r$$

$$a_r = r$$

$$a_1 + r - (a_1 + d) = 1\varepsilon \quad a_1 + \varepsilon d - a_1 - d = 1\varepsilon \quad r - d = 1\varepsilon \quad d = r - \varepsilon$$

$$a_1 + a_r = r \quad a_1 + a_r + d = r \quad \rightarrow a_1 = r$$

$$a_1 + r + d + a_r - r = r$$

$$\frac{r + r}{-r} = \left[ -\frac{1}{r} \quad a_1, n, k \right]$$

MICRO



$$a_1 + a_r + a_v = 10$$

← 1 سوال

$$a_e + a_d = 20$$

$$ra_1 + rd = 20$$

$$-ra_1 - rd = -10$$

$$ra_1 + rd = 10 \quad a_1 + d = 20 \quad ad = 10 \quad d = r$$

$$ra_1 + r = 10$$

$$ra_1 = 9 \quad a_1 = r$$

$$a_{10} = r + \frac{9 \times r}{r} = \boxed{29}$$

← 9 سوال

$$S_9 = 9 S_r \quad a_1 + a_r + \dots + a_9 = 9(a_1 + a_r + a_v)$$

$$\frac{9}{r} [ra_1 + 10d] = 9 \left[ \frac{r}{r} (ra_1 + rd) \right]$$

$$9a_1 - rva_1 = -r9d + rvd$$

$$9a_1 + r9d = rva_1 + rvd$$

$$8a_1 = r9d \quad a_1 = \frac{r}{8}d$$

$$\frac{a_r}{a_v} = \frac{a_1 + 19d}{a_1 + d} = \frac{\frac{r}{8}d + 19d}{\frac{r}{8}d + d} = \frac{\frac{r}{8} + 19}{\frac{r}{8} + 1} = \boxed{r}$$

← 10 سوال

$$a_1 = 11$$

$$11 + 9d = 20$$

$$a_e = a_1 + rd$$

$$a_v = 20$$

$$9d = 9$$

$$a_e = 11 + 12$$

$$d = 1$$

$$a_e = 23$$

$$\text{② } 11, 23, 35, 47, 59, 71, 83, 95$$

$$23 = 11 + rd$$

$$-12 = rd$$

$$-12 = d$$