

$$L_{10} = 0 \Rightarrow 10a + b = 0 \Rightarrow b = -10a$$

$$L_n = an + b$$

$$L_n = an - 10a = a(n - 10)$$

(8)

$$A_2 = L_2 \Rightarrow a(2 - 10) = -10a$$

$$A_n = L_n \Rightarrow a(n - 10) = -10a$$

$$A_n - A_{n-1} = (n - 10)a - (n - 11)a$$

$$-10a - (-11a) = 1a$$

$$\Rightarrow \delta a = 1a \Rightarrow a = \frac{\delta}{\epsilon} a \rightarrow L_2 = a(2 - 10) = -8a$$

$$\Rightarrow \frac{L_2}{\delta} = \frac{\delta a}{\epsilon a} = \boxed{\epsilon}$$

(9) ✓

$$\psi(a, \epsilon d)^r = \psi(a, \epsilon d) a, \epsilon \psi(a, \epsilon d) a$$

(10)

$$\psi a, \epsilon \psi a, d + \psi d^r = 1 a, \epsilon + 1 \psi a, d$$

$$\Rightarrow \psi a, \epsilon \psi a, d - \psi d^r = 0$$

$$\frac{a\epsilon}{\delta} = \frac{a, \epsilon \psi d}{\delta} = \frac{a}{\delta} + \psi$$

$$\boxed{\delta \neq 0} \quad \psi \frac{a}{\delta} + \frac{a, \epsilon \psi d}{\delta^r} - \psi \frac{d^r}{\delta^r} = 0$$

$$\Rightarrow \psi \left(\frac{a}{\delta} \right)^r + \left(\frac{a, \epsilon}{\delta} \right) - \psi = 0$$

(11) ✓

$$\Delta = 1^r - \psi - \psi = 1 + \epsilon \Delta = \boxed{\epsilon} = \frac{\psi}{\epsilon} \rightarrow \frac{-1 + \psi}{\epsilon}$$

$$\rightarrow \frac{-1 + \psi}{\epsilon} = \frac{\psi}{\epsilon} \quad \epsilon = \frac{-1 + \psi}{\epsilon} = -1 + \psi$$

$$\left(\frac{a\epsilon}{\delta} \right)^r = a, \epsilon \psi = \frac{\psi}{\epsilon} \psi = \frac{\psi}{\epsilon}$$

$$\left(\frac{a\epsilon}{\delta} \right)^r = a, \epsilon \psi = \boxed{1}$$

$$rb = a + c$$

نکته: $\textcircled{v}$

$$\left(\frac{a}{r}\right)^r = \left(\frac{c}{z}\right) \times b \Rightarrow \frac{a^r}{z} = \frac{cb}{z} \Rightarrow a^r = cb$$

$$q = \frac{\frac{a}{r}}{\frac{c}{z}} = \frac{a}{r} \times \frac{z}{c} = \frac{za}{c}, \quad q = \frac{b}{\frac{a}{r}} = \frac{rb}{a}$$

$$\Rightarrow \frac{za}{c} = \frac{rb}{a} \Rightarrow \frac{a}{c} = \frac{b}{a}$$

$$c = rb - a \xrightarrow{\text{استبدال}} a^r = (rb - a)b$$

$$\Rightarrow a^r = rb^r - ab \Rightarrow a^r + ab - rb^r = 0$$

$$b \neq 0 \xrightarrow{\text{تقسیم بر } b} \left(\frac{a}{b}\right)^r + \left(\frac{a}{b}\right) - r = 0 \Rightarrow a^r + a - r = 0$$

$$(n+r)(n-1) = 0 \quad \begin{cases} \frac{a}{b} = -r \Rightarrow a = -rb \\ \frac{a}{b} = 1 \Rightarrow a = b \end{cases}$$

$\textcircled{r}$ ✓

$$a = -rb \quad rb = c + (-rb) \Rightarrow c = zb$$

$$q = \frac{za}{c} \quad q = \frac{-zb}{zb} = -1$$

$$rq = r \times (-1) = -r$$

$$a = -rb, \quad c = zb$$

$$\left(\frac{a}{b}\right)^r + r\left(\frac{a}{b}\right) - r = 0 \Rightarrow x^r + rx - r = 0$$

$$x = \frac{-r \pm \sqrt{r^2 + 4r}}{2} = \frac{-r \pm r\sqrt{r+4}}{2} = -1 \pm \sqrt{r+4}$$

$$\frac{a}{b} = -1 \pm \sqrt{r+4}$$

$$c = \frac{a}{b} \times b = -1 \pm \sqrt{r+4} \times b$$

$$q = \frac{a}{b} = -1 \pm \sqrt{r+4}$$

$$\frac{a}{b}$$

$$b = ar, c = ar^r$$

مطلوب (1)

$$V(r) = c + \frac{b}{r} \Rightarrow \xi a = c + \frac{b}{r}$$

$$\xi a = ar^r + c(ar)$$

$$\xi = r^r + ar \rightarrow r^r + ar - \xi = 0 \Rightarrow (r+\xi)(r-1) = 0$$

$$\frac{T_a}{T_y} = r^r = (-\xi) = -4\xi \quad ?$$

(2) ✓

$$\frac{a_1 r^a}{(a_1 r)^a} + \frac{a_1 r}{a_1 r} = r$$

(9)

$$\frac{a_1 r^a}{a_1^a r^a} + \frac{r}{a_1} = r \Rightarrow \frac{r^r}{a_1^a} + \frac{r}{a_1} = r \Rightarrow r + r a_1 = r a_1^a$$

$$r a_1^r - r a_1 - r^r = 0$$

$$a_1 = \frac{r \pm \sqrt{4r^r}}{\xi}$$

$$|r| \geq r \rightarrow r > 0, a_1 = -\frac{r}{r}$$

$$|r| \geq -r \rightarrow r < 0, a_1 = r$$

$$\left(\frac{a_1}{r} = \frac{r}{r} = 1 \right) \quad \left(\frac{a_1}{r} = -\frac{1}{r} \right) \quad ?$$

(2) ✓

$$a_2 = \sqrt{a_1}, a_3 = 2r$$

(10)

$$a_2 = a_1 r^r, a_3 = a_1 r^a, a_4 = a_1 r^r$$

$$a_1 r^r = \sqrt{a_1 r^a} \Rightarrow a_1 r^a = a_1 r^r$$

(2) ✓

$$a_2 = 2r \Rightarrow a_1 r^a = 2r \quad (a_1 r)^a = 2r \Rightarrow 1 \cdot r^a = 2r$$

$$a_1 \cdot r = 1 \quad a_1 \cdot a = 1 \Rightarrow a_1 = \frac{1}{a}$$

$$\frac{1}{r} - \frac{1}{a} = \frac{1}{y}$$

$$\frac{r^a = 2r}{r = a}$$

$$a_n \begin{cases} a_0 = 1 \\ a_3 = 2 \\ a_4 = 4 \\ a_9 = 1 \end{cases}$$

ضابطه اول

$$\begin{cases} a_1 = 4 \\ a_4 = 2 \\ a_7 = 0 \end{cases}$$

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$$a_n \begin{cases} a_3 = a+1 \\ a_4 = a+1 \\ a_7 = 2+a \end{cases}$$

$$+ = 19 \rightarrow a = -2$$

جمع جملات $a_2 + a_5$ - از ضابطه سوم به دست می آید

$$a_n \left[\frac{n}{k+2} \right] + a \rightarrow s_n = \left[\frac{k-2}{k+2} \right]$$

$$\sum_{k=1}^a \left[\frac{k-2}{k+2} \right] = -1 - 1 + \dots = -2$$

$$\begin{cases} t_0 = 25a + 5b + c = 14 \\ t_7 = 49a + 7b + c = 17 \end{cases} \rightarrow 12a + b = 14$$

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ضدیب بزرگترین درجه جمله مجهول a است.

$$a = \frac{1}{12} (-t_0) \rightarrow a = -\frac{1}{6}$$

$$12a + b = 14 \rightarrow 12\left(-\frac{1}{6}\right) + b = 14 \rightarrow b = 4$$

$$t_0 = 14 \rightarrow 25\left(-\frac{1}{6}\right) + 4(5) + c = 14 \rightarrow c = -1$$

$$\frac{a_{15}}{a_1} = \frac{14}{2,1} = 5$$