

$$a+d, a+3d, a+5d \rightarrow \text{جمله منتهی متوالی و متناهی}$$

(7) 1, 20

$$a_{10} = \frac{1}{\varepsilon}$$

$$a^x + 4ad + 9d^2 = a^x + 5ad + \varepsilon 9d^2 \rightarrow ad + \varepsilon d^2 = 0$$

$$a = -\frac{\varepsilon d^2}{d} = a = -\varepsilon d$$

$$\frac{a+5d}{a+3d} = \frac{10d}{-d} = -10 = q$$

$$a_{10} = \frac{1}{\varepsilon} \times (-10)^9 = -\varepsilon 10^9 \times \frac{1}{\varepsilon}$$

$$3aq, 2aq^2, aq^3 \rightarrow \text{جمله منتهی متناهی}$$

(8) 1, 18

$$3aq + 2aq^2 = \varepsilon aq^3 \rightarrow 3 + q^2 = \varepsilon q \rightarrow q^2 - \varepsilon q + 3 = 0 \rightarrow q \Rightarrow 14 - 12 = 2 \rightarrow \frac{\varepsilon \pm 2}{2} = 1, 3$$

دنباله با ضرایب متناهی و دنباله ای غیر منتهی است $q \neq 1$

$$2, \frac{1}{\varepsilon}, \dots \rightarrow d = \frac{1}{\varepsilon} - 2 = -\frac{1}{\varepsilon}$$

(9)

2

$$\frac{a\varepsilon + x}{2 - \frac{1}{\varepsilon}}, \frac{a1 + x}{2 - \frac{1}{\varepsilon}}, \frac{a13 + x}{2 - \frac{1}{\varepsilon}} \rightarrow \frac{\Delta}{\varepsilon} + x, \frac{1}{\varepsilon} + x, -1 + x$$

$$x^x + \frac{1}{\varepsilon}x + \frac{1}{14} = x^x + \frac{1}{\varepsilon}x - \frac{\Delta}{\varepsilon} \rightarrow \frac{1}{\varepsilon}x + \frac{1}{14} = 0 \rightarrow \frac{1}{\varepsilon}x = -\frac{1}{14} \rightarrow x = \left(\frac{-\frac{1}{14}}{\frac{1}{\varepsilon}} \right) = -\frac{\varepsilon}{14}$$

$$\frac{\frac{\Delta}{\varepsilon} - \frac{\varepsilon}{14}}{-\frac{14}{\varepsilon} - \varepsilon}, \frac{\frac{1}{\varepsilon} - \frac{\varepsilon}{14}}{-\frac{\varepsilon}{\varepsilon} - \Delta}, -1, -\frac{11}{\varepsilon}$$

$$\frac{-4/14\Delta}{-\Delta} = \frac{-\Delta}{-\varepsilon} = q = 1, 14\Delta$$

$$a_1, a_\varepsilon, a_v \text{ منتهی متناهی} \Rightarrow a_1, a_r, a_{10} \text{ منتهی متناهی}$$

(10)

$$a_1 + a_\varepsilon + a_v = 13$$

$$a_r - a_1 = \frac{a_{10} - a_r}{\Delta} = d \rightarrow aq^r - a = \frac{aq^4 - aq^r}{\Delta} \rightarrow$$

1, 18

$$1 \times aq^r - 1 \times a = aq^4 - aq^r \rightarrow q^4 - 9q^r - 1 = 0$$

$$\rightarrow q^r \Rightarrow 11 + 32 = \varepsilon 9 \rightarrow \frac{q \pm 1}{2} = 1, 1 \rightarrow q = 1, 2$$

$$a + aq^r + aq^4 = 13$$

$$a + 11a + 49a = 13 \rightarrow 60a = 13 \rightarrow a = \frac{13}{60}$$

$$a + a + a = 13 \rightarrow 3a = 13 \rightarrow a = \frac{13}{3}$$

$$a_1, a_r, a_{10} \rightarrow a, a+d, a+9d = 3a + 10d$$

$$a_r - a_1 = b_r - b_1 = d$$

$$a_v - a_1 = b_v - b_1 = 9d$$

$$\frac{a(q^r - 1)}{a(q^9 - 1)} = \frac{d}{9d} \rightarrow q^r + 1 = 9 \rightarrow q = 2$$

$$a + aq^r + aq^9 = a + 11a + 49a = 60a \rightarrow a = 1$$

$$a_r - a_1 = d \rightarrow (1 \times 2^r) - 1 = 13 \rightarrow d = 13$$

$$q = 2 \rightarrow 13 = 13 \rightarrow a = \frac{13}{60}$$

$$d = \frac{13}{60} - \frac{13}{60} = 0$$

* دنباله منتهی متناهی و منتهی متناهی

$$\begin{aligned} 10d = -13 &\rightarrow d = -\frac{13}{10} \\ 10d = 13 &\rightarrow d = \frac{13}{10} \end{aligned}$$

$$(a^r)(a^r) = (a^r)^2$$

$$(a+d)(a+rd) = (a+rd)^2$$

$$\cancel{a^r} + rad + rd^r = \cancel{a^r} + 4ad + 4d^r$$

$$rad = rd^r \xrightarrow[\text{بعضی } r]{\text{دو طرفه ضرب}} a = d$$

$$a^r, a^e, a^r$$

$$ra \xrightarrow{\times r} \varepsilon a \xrightarrow{\times r} ra \rightarrow q = r \rightarrow a_1 = a_1 \times q = \frac{1}{\varepsilon} \times r = 1r$$