

$$a \cdot aq \cdot aq^2 = (aq)^2 = 4\epsilon \rightarrow aq = \epsilon \rightarrow a = \frac{\epsilon}{q}$$

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$$a + aq + aq^2 = a + \epsilon + \epsilon q = 11 \rightarrow a + \epsilon q = 11 \rightarrow \frac{\epsilon}{q} + \epsilon q = 11 \xrightarrow{\times q} \epsilon q^2 + 11q + \epsilon = 0$$

$$\rightarrow q = \frac{11 \pm \sqrt{11^2 - (4 \times \epsilon \times \epsilon)}}{2} \rightarrow q = \frac{11 \pm 11}{2} \begin{matrix} \xrightarrow{-} \epsilon \times \text{موجب} \\ \xrightarrow{+} \frac{1}{\epsilon} \end{matrix}$$

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$$0 < q < 1$$

$$x^2 = \epsilon, x, x^2 = 2$$

$$(x^2)^2 = (x^2 + \epsilon)(x^2 - 2) \rightarrow \epsilon x^2 = x^4 - 2x^2 + \epsilon x^2 - 1 \rightarrow x^4 - 2x^2 - 1 = 0 \rightarrow (x^2 - \epsilon)(x^2 + 2) = 0$$

$$\rightarrow x^2 \begin{matrix} \xrightarrow{\epsilon} \\ \xrightarrow{-2} \end{matrix} \rightarrow x \begin{matrix} \xrightarrow{2} \\ \xrightarrow{-2} \end{matrix} \xrightarrow{\text{بسیار دقت}} \begin{matrix} 1, \epsilon, 2 \rightarrow q = \frac{1}{2} \\ 1, -\epsilon, 2 \rightarrow q = \frac{1}{2} \end{matrix} \quad \text{چون } q = \frac{1}{2}$$

$$S_v = a \left(\frac{1 - q^v}{1 - q} \right) \rightarrow 1 \left(\frac{1 - (\frac{1}{2})^v}{1 - \frac{1}{2}} \right) = \frac{11}{1}$$

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$$S_\Delta = a + aq + aq^2 + aq^3 + aq^4 = a(1 + q + q^2 + q^3 + q^4) \Rightarrow 1 \times \frac{1}{2} \times \frac{11}{1} = 11$$

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$$\text{میانگین اولی} = \frac{4\epsilon + 1}{2} = 21, 5 \rightarrow A$$

$$\left. \begin{matrix} \text{میانگین دومی} = 1 \times q^2 \\ q^2 = \sqrt[4]{4\epsilon \times 1} = 2 \end{matrix} \right\} 1 \times 2^2 - 1 = 3 \rightarrow B$$

$$A + B = 21, 5 + 3 = 24, 5$$

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$$-2\epsilon, -23, 74, \dots \rightarrow d = 0, 25 \quad \text{میانگین دومی} = -2\epsilon + (100 \times 0, 25) = 1$$

$$a_1 = 128 \quad a_n = 1 \quad q^{n-1} = \frac{128}{1} \rightarrow q^v = 128 \rightarrow q = 2$$

$$a+rd, a+rd, a+rd$$

-9

$$(a+rd)^r = (a+rd)(a+rd) \rightarrow a^r + rrd^r + 1rd = a^r + 1rd + rrd + 1rd^r \rightarrow rrd^r = -rd$$

$$\xrightarrow{+d} rrd = -rd \rightarrow d = \boxed{\frac{-a}{10}}$$

$$a+rd, a+rd, a+rd$$

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$$(a+rd)^r = (a+rd)(a+rd) \rightarrow a^r + rrd^r + rda = a^r + rda + da + rrd^r \rightarrow rrd^r = rda \rightarrow d = a = \frac{1}{\varepsilon}$$

$$\text{مثلاً} \rightarrow \frac{1}{r}, 1, r, \dots \rightarrow q = r \quad \text{مثلاً} \rightarrow \frac{1}{r} \times r^q = r^1 = \boxed{r}$$

$$raq, raqr, aqr$$

-A

$$d \rightarrow raqr - raqr = aqr - raqr \xrightarrow{+a} rqr - rqr = q^r - rqr \rightarrow q^r - \varepsilon q^r + rqr = 0$$

$$\rightarrow q(q^r - \varepsilon q + r) = 0 \quad \begin{cases} q = 0 \text{ ممتنع} \\ q^r - \varepsilon q + r = 0 \xrightarrow{a+b+c=r} \begin{cases} 1 \text{ ممتنع} \\ \boxed{r} \end{cases} \end{cases}$$

$$r, 1, r, \dots \rightarrow d = 0, r$$

$$\text{مثلاً} \rightarrow r + (r \times -0, r) = 1, r$$

$$\text{مثلاً} \rightarrow r, r$$

$$\text{مثلاً} \rightarrow -1$$

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$$1, r, r+k, 0, r+k, -1+k, \dots \rightarrow (0, r+k)^r = (1, r+k)(-1+k)$$

$$\rightarrow \cancel{1} + 0, r+k = \cancel{1} + 0, r+k - 1, r \rightarrow 0, r+k = -1, r \rightarrow k = -\Delta, r$$

$$k \text{ ممتنع} \Rightarrow -\varepsilon, -\Delta, -r, \dots \rightarrow q = \frac{-\Delta}{-\varepsilon} = \frac{-r}{-\Delta} = \boxed{1, r}$$

$$a_1 + aq^r + aq^r = vr = a_1 + (a+rd) + (a+rd) \xrightarrow{(aq^r)^r = (a)(aq^r)} (a+rd)^r = (a)(a+rd) \rightarrow a^r + d^r + rrd = a^r + rda$$

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$$\rightarrow d^r = rda \rightarrow d = va$$

$$\rightarrow a_1 + 1a + r\varepsilon a_1 = a_1(1+1+r\varepsilon) = vr \rightarrow a_1 = 1$$

$$\text{مثلاً} \rightarrow 1 + q^r + q^r = vr \rightarrow q^r(q^r + 1) = vr \rightarrow q^r = 1 \rightarrow q = \boxed{r}$$