

مهم و مختصر

تکلیف ۱۷

سایمادادی

(۱) $\underbrace{1, 4, 9, 16, 25, \dots}_{1^2, 2^2, 3^2, 4^2, 5^2, \dots}$ و $\underbrace{4, 11, \dots}_{1^2, 2^2}$ $\rightarrow$ اعتبار مربع $V^3 =$ واسطه

$a_9 \rightarrow \{45, \dots, 11\}$ $b = \frac{a+c}{2} \Rightarrow \frac{45+11}{2} = \underline{V^3}$

(۲) $\{2, \dots, 32\}$ (۲)

$\{2, 3, 4, \dots, 12\}$ و $\{47, \dots, 201\}$ $134 =$ میانگین

$a_5 \rightarrow \{47, \dots, 201\}$ میانگین $= \frac{47+201}{2} = 134$

(۳)

$an^2 + bn + c \leftarrow$ تابع درجه ۲

$a = \frac{1}{V} \cdot (-14) = -\frac{1}{5}$

$\Rightarrow b = 4, c = -1$

$a_1 = -\frac{1}{5} + 4 - 1 = \frac{14}{5}$

$\begin{cases} -\frac{1}{5}(5)^2 + 5b + c = 14 \rightarrow 5b + c = 19 & (1) \\ -\frac{1}{5}(7)^2 + 7b + c = 17 \rightarrow 7b + c = 27 \end{cases} \rightarrow 2b = 8 \rightarrow b = 4$

$\frac{a_{15}}{a} = \frac{14}{\frac{14}{5}} = 5$ a_{15} و a_1 و a است

$a_2 = a + 2d = a' + d' \rightarrow a + 2d = a' + d' \rightarrow a + 3d = -1d' \quad (1)$

$a_8 = a + 7d = a' + 4d' \rightarrow a + 7d = a' + 4d' \rightarrow a + 7d = -3d' \quad (2)$

$a'_{10} = a' + 9d' = 0 \rightarrow a' = -9d'$

$a + 7d - a - 3d = -3d' + 1d' \rightarrow 4d = -2d' \rightarrow d' = -\frac{2}{3}d$

$a'_{15} = a' + 14d' = -9d' + 14d' = 5d' = 5(-\frac{2}{3}d) = -\frac{10}{3}d$

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a_{15} خطی ۴ برابر قدر نسبت حسابی است

$$\frac{a\varepsilon}{d} = \frac{\frac{a}{\frac{1}{\varepsilon}}}{\frac{1}{\varepsilon}} = \frac{a}{\frac{1}{\varepsilon}} = a\varepsilon = a + r\left(\frac{ra}{r}\right) = a + ra = ra$$

$$a\varepsilon = a + r\left(-\frac{a}{r}\right) = a - \frac{ra}{r} = -\frac{a}{r}$$

$$\frac{a\varepsilon}{d} = \frac{ra}{\frac{ra}{\varepsilon}} = \frac{a}{\frac{1}{\varepsilon}} = a\varepsilon$$

$$4(a+d)^r = a(d(a+rd) + r(a+d)) \quad \left[\frac{1}{r}, \frac{q}{r} \text{ و } \frac{a\varepsilon}{d} \right] (4)$$

$$4(a^r + rad + d^r) = a(1a + 1od + ra + rd) = a(1a + 1rd)$$

$$1a^r + 1rad - 1a^r - 1rad - 4d^r = ra^r + ad - 4d^r = 0 \Rightarrow r + q - 4q^r = 0$$

$$q = \frac{d}{a} \in \left\{ -\frac{1}{r}, \frac{r}{r} \right\} \rightarrow d = -\frac{a}{r} \quad \text{و} \quad d = \frac{ra}{r}$$

$$\left. \begin{array}{l} \text{مجموعه } a, a+d, a+rd \\ \text{مجموعه } a+d, \frac{a}{r}, \frac{a+rd}{\varepsilon} \end{array} \right\} \Rightarrow \frac{a}{r} = \frac{a}{ra+rd} \Rightarrow \frac{a+rd}{ra} = \frac{a}{ra+rd} \quad (V)$$

$$\rightarrow ra^r = ra^r + 4ad + \varepsilon d^r \rightarrow \frac{4ad}{ra} + \frac{\varepsilon d^r}{ra} = 0 \rightarrow ra = -rd$$

$$\rightarrow a = -\frac{r}{r}d$$

$$\rightarrow \left(-\frac{r}{r}\right)d + d, \frac{\left(-\frac{r}{r}\right)d}{r}, \frac{\left(-\frac{r}{r}\right)d + rd}{\varepsilon} \rightarrow \frac{d}{r}, \frac{-d}{r}, \frac{d}{r}$$

$$q = -1$$

$$rq = -r$$

دوباره در نسبت منبری -r است

$$ra - r^2b = c - ra \rightarrow ra - r^2aq = aq^r - ra \quad (A)$$

$$\rightarrow -aq^r + ra + ra - r^2aq = -aq^r + \varepsilon a - r^2aq = \varepsilon a - aq^r (r + q) = 0$$

$$\rightarrow \varepsilon - q^r (r + q) = 0 \rightarrow \varepsilon = q^r + r^2q \rightarrow q^r + r^2q - \varepsilon = 0$$

$$(q + \varepsilon)(q - 1) = 0 \quad q = 1, -\varepsilon$$

$$\frac{a_1}{a_4} = q^{1-4} = q^3 \begin{cases} q=1 \rightarrow q^3 = 1 \\ q=-\varepsilon \rightarrow q^3 = -4\varepsilon \end{cases}$$

$$\frac{a_1}{a_4} = 1$$

$$\frac{a_1}{a_4} = -4\varepsilon$$