

آرین نصیری - دهم ب - شماره ۱۴

$$\text{الف) } a_n = \frac{1}{r} \times r^{n-1} \quad a_{10} = \frac{1}{r} \times r^9 = 252$$

$$\text{ب) } \frac{a_{14}}{a_{13}} = \frac{\frac{1}{r} \times r^{14}}{\frac{1}{r} \times r^{13}} = a^{\frac{14}{13}} = r^{\frac{14}{13}} = 14$$

$$\text{ج) } b^{\frac{1}{r}} = \left(\frac{1}{r} \times r^{\frac{1}{r}}\right) \left(\frac{1}{r} \times r^{\frac{1}{r}}\right) = r^{-\frac{1}{r}} \times r^{\frac{1}{r}} = b^{\frac{1}{r}} \Rightarrow b^{\frac{1}{r}} = r^{\frac{1}{r}} \Rightarrow b = r \Rightarrow b = \frac{1}{r} \times r^{n-1} \Rightarrow n = 14$$

$$\text{د) } 12h = \frac{1}{r} \times r^{h-1} \Rightarrow 252 = r^{h-1} \Rightarrow r^1 = r^{h-1} \Rightarrow h = 2$$

$$\left. \begin{array}{l} a_2 = 12 \\ a_8 = 94 \end{array} \right\} \Rightarrow \frac{ar^2}{ar^8} = r^{\frac{2}{8}} = \frac{12}{94} \Rightarrow r = \frac{12}{94}$$

$$ar = 12 \Rightarrow a \times \frac{12}{94} = 12 \Rightarrow a = \frac{12}{\frac{12}{94}} = \frac{12}{1} = 12$$

$$a_n = \frac{12}{\frac{12}{94}} \times \left(\frac{12}{94}\right)^{n-1} \Rightarrow a_{10} = \frac{12}{\frac{12}{94}} \times \left(\frac{12}{94}\right)^9 \Rightarrow a_{10} = 12 \times \left(\frac{12}{94}\right)^9$$

$$\text{الف) } a_1 \times a_2 \times \dots \times a_n = 24 \times 2 \Rightarrow (a_1)^n = 24 \times 2 \Rightarrow a_1 = 2$$

$$\text{ب) } a_1 \times a_2 = ar^2 \Rightarrow r^2 = 9$$

$$(f + \sqrt{r})^2 = r^2 \times r^b \Rightarrow r^2 = r^{a+b} \Rightarrow r^0 = r^{a+b} \Rightarrow a+b = 0$$

$$b_{\text{میانگین}} = \frac{a+b}{2} = \left(\frac{a}{r}\right)$$

$$x^r = (x+1)(1-x) \Rightarrow x^r = 1^r - x^r \Rightarrow 2x^r = 1 \Rightarrow x^r = \frac{1}{2} \Rightarrow x = \sqrt[r]{\frac{1}{2}}$$

$$a + ar^r = 21 \Rightarrow a(1+r^r) = 21 \Rightarrow a = \frac{21}{1+r^r}$$

$$ar + ar^r = 12 \Rightarrow ar(1+r) = 12 \Rightarrow a = \frac{12}{r(1+r)} \Rightarrow \frac{12}{r(1+r)} (1+r^r) = 21$$

$$\frac{12(1+r^r)}{r(1+r)} = 21 \Rightarrow 12(1+r^r) = 21r(1+r) \Rightarrow 12 + 12r^r = 21r + 21r^2$$

$$12r^r - 21r^2 - 21r + 12 = 0 \Rightarrow 3r^r + 4r^2 - 7r + 4 = 0 \Rightarrow r = 2 \Rightarrow r(2V) - V(a) - V(r) + r = 0$$

$$a = \frac{12}{12} = 1 \Rightarrow a_1, a_2, a_3, a_4 = 1, 2, 4, 8$$

s.a.m

$$\begin{aligned}
 pr = rV &\Rightarrow tr = r^r \Rightarrow aq = r^r \Rightarrow a = \frac{r^r}{q} \quad -V \\
 sr = a + aq + aq^r &\Rightarrow \frac{r^r}{q} (1 + q + q^r) \Rightarrow 1r^r = r^r (1 + q + q^r) \Rightarrow q = r, \frac{1}{r} \\
 1r^r q = r + r^r + r^r q^r &\Rightarrow r^r q^r - 10q + r = 0 \Rightarrow q = \frac{10 \pm \sqrt{100 - 4r^r}}{2} = \frac{10 \pm \sqrt{100 - 4r^r}}{2} \begin{cases} \frac{10}{q} = r \\ \frac{r}{q} = \frac{1}{r} \end{cases} \\
 q = r &\Rightarrow a = r^r \Rightarrow b, r, q \\
 q = \frac{1}{r} &\Rightarrow a = q \Rightarrow q, r, 1
 \end{aligned}$$

$$\begin{aligned}
 \text{ii) } a_n &= r, q, 1, \dots, q^n = r \times r^{n-1} \quad -\Lambda \\
 s_n &= \frac{r(r^n - 1)}{r - 1} = r^n - 1
 \end{aligned}$$

$$\begin{aligned}
 \text{ii) } p_n &= \sqrt{(r \times r \times r)^{10}} \Rightarrow \sqrt{r^r \times r^{q_0}} = r^{10} \times r^{r \times q_0} \\
 a_{10} &= r^9 r^9
 \end{aligned}$$

$$\begin{aligned}
 a_n &= a, aq, aq^r, \dots \quad q \\
 b_1 &= aq - a = a(q - 1) \\
 b_r &= aq^r - aq = aq(q - 1) \\
 b_r &= aq^r - aq^r = aq^r(q - 1)
 \end{aligned}
 \left. \begin{array}{l} \\ \\ \end{array} \right\} a(a-1), aq(a-1), aq^r(a-1), \dots$$

$$\frac{b_r}{b_1} = \frac{aq(a - r)}{a(q - 1)} = q = R$$

$$\text{ii) } s_n = a + aq + aq^r + \dots + aq^{n-1} \Rightarrow s_n q = aq + aq^r + \dots + aq^n$$

$$\begin{aligned}
 \text{ii) } s_n &= a + aq + aq^r + \dots + aq^{n-1} \Rightarrow s_n q = aq + aq^r + \dots + aq^n \\
 s_n - s_n q &= a - aq^n \Rightarrow s_n(1 - q) = a(1 - q^n) \Rightarrow s_n = \frac{a(1 - q^n)}{1 - q}
 \end{aligned}$$

$$s_n = \frac{a(1 - q^n)}{1 - q}$$

s.a.m