

باستخدام تكليف سماره 14:

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طاس (م) جز 1

الف 1

$$d = \frac{1}{\frac{1}{r}} = r \quad a_n = a_1 r^{n-1} \rightarrow a_{10} = \frac{1}{r} \times r^9 = 10r$$

ب 1

$$\frac{a_{10}}{a_1} = \frac{a_1 \times r^{10}}{a_1 \times r^1} = \frac{\frac{1}{r} \times r^{10}}{\frac{1}{r} \times r^1} = r^9 = 10$$

ج 1

$$a_1 = a_1 \times r^1 = \frac{1}{r} \times r^1 = 1 \quad a_{10} = a_1 \times r^9 = \frac{1}{r} \times r^9 = 10 \Rightarrow 10 = \frac{10 \times r}{10} = a_{10}$$

$$a_{10} = \sqrt{10} = 10$$

د 1

$$\text{بفرضه} \Rightarrow a_n = \frac{1}{r} \times r^{n-1} \rightarrow \frac{1}{r} \times r^{n-1} = 10 \rightarrow r^{n-1} = 10r = 10 \Rightarrow n-1=1, \boxed{n=2}$$

ه 1

$$a_1 = 10, a_{10} = 100 \quad \frac{a_m}{a_n} = r^{m-n} \rightarrow \frac{100}{10} = r^9 \rightarrow r^9 = 10 \Rightarrow \boxed{r=10}$$

$$a_1 = 10 \rightarrow a_{10} = 10 \times 10 = 100 \rightarrow a_{10} = 100 \times 10 = 1000$$

$$\frac{a_n}{r^n} \times \frac{a_r}{r} \times a_r \times a_r \times a_r \times a_r \times r^r = r^r \Rightarrow (a_r)^5 = r^r \Rightarrow a_r = r^{\frac{r}{5}} \quad \text{الف 13}$$

$$a_1 \times a_5 = \frac{a_r}{r^r} \times a_r r^r = a_r^2 \Rightarrow r^r = a_r^2 \quad \text{ب}$$

$$\frac{r\sqrt{r}}{r^a} = \frac{r^b}{r\sqrt{r}} \Rightarrow r\sqrt{r} = r^r \times r^{\frac{1}{2}} = r^{\frac{a}{2}} \Rightarrow \frac{a}{2} = a = b - \frac{a}{2} \Rightarrow b = \frac{3a}{2} \quad \text{ج}$$

$$M = \frac{a+b}{r} = \frac{a+\frac{3a}{2}}{r} = r, \omega \quad \text{د}$$

$$a_r = 1 - a \quad a_v = a \quad a_{11} = a + 1 \quad \frac{a_{11}}{a_v} = \frac{a_r}{a_v} \Rightarrow \frac{a+1}{a} = \frac{1}{1-a} \quad \text{ه}$$

$$\Rightarrow a^r = 1 - a^r \Rightarrow r a^r = 1 \Rightarrow a^r = \frac{1}{r} \Rightarrow n = \pm \sqrt{\frac{1}{r}} \quad \text{و}$$

$$a_r + a_1 = r a, \quad a_r + a_r = r^2 \Rightarrow \frac{r a}{r^2} = \frac{a_1 + a_1 r^r}{a_1 r + a_1 r^r} = \frac{a_1(1+r^r)}{a_1 r(1+r^r)} \Rightarrow \frac{r}{r^2} = \frac{(1+r)(r^r+r+1)}{r(r+1)} \quad \text{ز}$$

$$\Rightarrow V r = r^r r^r + r - r^r \Rightarrow r^r r^r - 1 \cdot r + r = 0 \Rightarrow (r-1)(r-1) = 0$$

$\frac{r}{r^2} \xrightarrow{r} \frac{1}{r} \xrightarrow{r} \frac{1}{r^2}$

$$r = r \rightarrow 1, r, 9, \textcircled{r^r} \quad r = \frac{1}{r} \rightarrow \textcircled{r^r}, 9, r, 1$$

$$a + a r + a r^r = r^2 \Rightarrow a(1+r+r^r) = r^2 \quad a \times a r \times a r^r = r^r \Rightarrow a^3 r^r = r^r \Rightarrow a r = r \quad \text{ح}$$

$$a + r + a r^r = r^2 \Rightarrow r^2 = \frac{r}{r} (r^r + r + 1) \Rightarrow r^2 r = r^r r + r^2 + r \Rightarrow r^r r - 1 \cdot r + r = 0$$

$$r^r - 1 \cdot r + r = 0 \Rightarrow (r-1)(r-1) = 0$$

$$b \Rightarrow \frac{9}{r} = r \Rightarrow \frac{1}{r} \Rightarrow r = r \rightarrow 1, r, 9 \quad r = \frac{1}{r} \rightarrow 9, r, 1$$

$$S_n = a_1 \left(\frac{1-a^n}{1-a} \right) \Rightarrow S_{10} = r \left(\frac{1-r^{10}}{1-r} \right) = \frac{1-r^{10}}{-1} = \frac{1-9 \cdot 9}{-1} = 80 \quad \text{ط}$$

$$P_n = a_1^n \times r^{\frac{n(n-1)}{2}} \Rightarrow P_{10} = r^{10} \times r^{\frac{10 \cdot 9}{2}} \Rightarrow P_{10} = r^{10} \times r^{45} \quad \text{ث}$$

$$a, ar, ar^2, \dots \rightarrow ar = a, ar^2 = ar, ar^3 = ar^2, \dots \rightarrow \frac{a(r-1)}{b_1} \text{ و } \frac{a(r^r-r)}{b_r} \quad \text{ق}$$

$$\frac{b_r}{b_1} = \frac{a \cdot r^{(n+1)-1} \times (r-1)}{a \cdot r^{n-1} \times (r-1)} = \frac{r^n}{r^{n-1}} = r^{n-(n-1)} = r^1 = r$$

$$\begin{aligned} S_n &= a + (a+d) + (a+2d) + \dots + (m-d) + m \\ + \\ S_n &= m + (m-d) + \dots + (a+d) + a \end{aligned}$$

$$2S_n = (a+m) + (a+d) + (m-d) + \dots$$

$$\Rightarrow 2S_n = (a+m) + (a+m) + (a+m) + \dots = 2S_n = n(a+m) \Rightarrow S_n = \frac{n}{2}(a+m)$$

$$S_n = \frac{n}{2} (a_1 + (a_1 + (n-1)d)) = \frac{n}{2} (2a_1 + (n-1)d)$$

$$\begin{aligned} \times r \left\{ \begin{aligned} S_n &= a + ar + ar^2 + ar^{n-1} + ar^n \\ rS_n &= ar + ar^2 + ar^{n-1} + ar^n \end{aligned} \right\} \quad rS_n - S_n = (ar + ar^2 + ar^3 + \dots) - (a + ar + \dots) \end{aligned}$$

$$S_n(r-1) = ar^n - a \Rightarrow S_n(r-1) = a(r^n - 1) \Rightarrow S_n = \frac{a(r^n - 1)}{(r-1)} \checkmark$$