

$$a + aq^r = r\lambda$$

$$aq + aq^r = r\lambda$$

$$\Rightarrow \frac{a(1+q^r)}{aq(1+q)} = \frac{r\lambda}{r} = \frac{v}{r} \quad \text{Q.U.W.}$$

$$\frac{(1+q)(1+q^r-q)}{(1+q)} = \frac{v}{r} = \frac{r+rq^r-rq}{r} = \frac{v}{r} \quad \text{Q.U.W.}$$

$$a + aq + aq^r = r\lambda$$

$$a + aq = r\lambda$$

$$a(1+q) = r\lambda$$

$$a \times aq \times aq^r = r\lambda$$

$$\sqrt[3]{a^3 q^3} = \sqrt[3]{r\lambda}$$

$$aq = r\lambda$$

$$\frac{v}{r}$$

$$r, \gamma, \lambda$$

$$S_{10} = r \left(\frac{r^{10} - 1}{r - 1} \right) = r^{10} - 1$$

$$P_{10} = \sqrt{(a_1 \cdot a_n)^n} = \sqrt{(r \times r \times r^9)^{10}} = (r \times r^9)^{10}$$

$$\hookrightarrow a_{10} = r \times r^9$$

$$a \quad aq \quad aq^r \quad aq^r \quad aq^r \quad \dots$$

$$\underbrace{a - aq}_{-q} \quad \underbrace{aq - aq^r}_{-q} \quad \underbrace{aq^r - aq^r}_{-q} \quad \dots$$

$$a + a + d + a + r + \dots$$

$$na + d(1 + r + r^2 + \dots + r^{n-1}) \Rightarrow \frac{n(n+1)}{2} \Rightarrow \frac{rn}{2} a + d \frac{(n-1)n}{2} \Rightarrow \frac{n}{2} (ra + (n-1)d)$$

$$S = a + aq + aq^r + \dots + aq^{n-1}$$

$$-qS = -aq - aq^r - \dots - aq^{n-1} + aq^n$$

$$S - qS = a - aq^n \Rightarrow S(1-q) = a(1-q^n) \Rightarrow S = a \left(\frac{1-q^n}{1-q} \right)$$

$$a_n = \frac{1}{r}, 1, 2, \dots$$

$\underbrace{\quad \times r \quad}_{\times r}$

$$a q^{n-1} = \frac{1}{r} \times r = r^1 \quad \text{الف:؟}$$

$$a q^{n-1} = \frac{1}{r} \times r = r^1 \quad \leftarrow \frac{a_{14}}{a_{13}} \quad (-)$$

$$a_1 = \frac{1}{r} \times r = r^1, \quad a_{10} = \frac{1}{r} \times r = r^1 \quad \leftarrow \frac{a_{14}}{a_{13}} \quad (-)$$

$r^1 = r^1 \times r^1 \Rightarrow r^1 = r^1 = r = r^1$

$$a q^{n-1} = 128 \quad \text{ب: 128 برای ضریب جداول}$$

$$\frac{1}{r} r^{n-1} = 128 \quad r^{n-1} = 128 = 2^7 \quad n-1 = 7 \quad \boxed{n=8}$$

$$a q^7 = 12 \quad a q^8 = 96 \quad \frac{a q^8}{a q^7} = \frac{96}{12} = 8 = q^1 \Rightarrow q = 2$$

$$\Rightarrow q = 2 \Rightarrow a \times r^7 = 12 \quad \Rightarrow a = \frac{12}{2^7} = \frac{3}{14}$$

$$\frac{3}{14} \times 2^7 = 12$$

$$a_1 \times a_2 \times a_3 \times a_4 \times a_5 = 2 \times 4 \times 8 \times 16 \times 32$$

$$\Rightarrow a_1 \times a_5 = 2 \times 32 = 64 \quad a_2 \times a_4 = 4 \times 16 = 64 \quad a_3 = 8$$

$$\Rightarrow (a_1 \times a_5) = (a_2 \times a_4) = (a_3)^2 \quad a_1 \times a_5 = a_3^2 = 64$$

$$a, \sqrt{r}, r^b \Rightarrow (\sqrt{r})^r = r^a \times r^b \Rightarrow r^r = r^a \times r^b \quad \text{د:}$$

$$\frac{1+r}{r} = 2.5$$

$$(r) \quad (v) \quad (ii) \quad a q^r = 1-n \quad a q^v = n \quad a q^{10} = n+1$$

$$n^r = (1-n)(n+1) \quad n^r = 1 - n^r = 2n^r = 1 \quad n^r = \frac{1}{2} \Rightarrow n = \pm \frac{1}{\sqrt{r}}$$

$$n = \pm \frac{1}{\sqrt{r}} \times \frac{\sqrt{r}}{\sqrt{r}} = \pm \frac{1}{r}$$