

دیکھا دین خواہ

$$q = p \quad \alpha_1 = \frac{1}{p}$$

$$\alpha_1 = \alpha_1 q^1 = \frac{1}{p} \times p^1 = p^0 = 1$$

۱۔ اند

$$\frac{\alpha_1 q^1}{\alpha_1 q^1} = \frac{p^1}{p^1} = p^0 = 1$$

ب۔

$$\alpha_1 = \frac{1}{p} \times p^1 = 1$$

$$\alpha_1 = p^0 = 1$$

$$\sqrt{p^0 \times p} = \sqrt{1 \times p} = p^{\frac{1}{2}}$$

ج۔

$$1^{\frac{1}{2}} = \frac{1}{p} \times p^{1-1} = p^0 = 1$$

$$1 = p^{n-1} = p^0 = 1 \Rightarrow n = 1$$

د۔

$$\alpha = 1^{\frac{1}{2}} \quad \alpha = q^{\frac{1}{2}}$$

$$\frac{\alpha_1 q^{\frac{1}{2}}}{\alpha_1 q^{\frac{1}{2}}} = \frac{q^{\frac{1}{2}}}{1^{\frac{1}{2}}} = q^{\frac{1}{2}} = 1 \quad \boxed{q = p}$$

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$$\alpha_1 = \alpha_1 q^1 = q^{\frac{1}{2}} \times p^1 = q^{\frac{1}{2}} \times p = p^{\frac{1}{2}} \times p = p^{\frac{3}{2}}$$

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$$\alpha_1 \times \alpha_1 \times \alpha_1 \times \alpha_1 \times \alpha_1 = p^{\frac{3}{2}} \times p^{\frac{3}{2}} = p^3$$

$$\alpha_1 \times \alpha_1 q^1 \times q^{\frac{1}{2}} \times \alpha_1 q^{\frac{1}{2}} \times \alpha_1 q^{\frac{1}{2}} = \alpha_1^5 q^{(1+\frac{1}{2}+\frac{1}{2}+\frac{1}{2})} = \alpha_1^5 q^{\frac{3}{2}} = (q^{\frac{1}{2}})^5 = q^{\frac{5}{2}}$$

$$\left(\frac{\alpha_1}{p}\right)^5 = p^{\frac{3}{2}} \times p^{\frac{3}{2}} = p^3$$

$$p^{\frac{5}{2}} = p^3 \times p^{\frac{1}{2}}$$

$$\boxed{\alpha_1 = p^{\frac{1}{2}}}$$

$$\alpha_1 \times \alpha_1 \left(\frac{\alpha_1}{p}\right)^{\frac{1}{2}} = \left(\frac{\alpha_1}{p}\right)^{\frac{1}{2}} = p^{\frac{1}{2}} = q^{\frac{1}{2}}$$

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$$p^{\frac{a}{2}} \times p^{\frac{b}{2}} = (p^{\frac{a+b}{2}})^{\frac{1}{2}} = p^{\frac{a+b}{4}} = p^{\frac{a+b}{4}} = p^{\frac{a+b}{4}}$$

$$\alpha_1 = 1 - n \quad \alpha_1 = n$$

$$\alpha_1 = n + 1$$

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$$\frac{\alpha_1}{\alpha_1 p} = q^{\frac{1}{2}} \rightarrow \frac{n}{1-n}$$

$$\frac{\alpha_1}{\alpha_1 p} = q^{\frac{1}{2}} \rightarrow \frac{n+1}{1+n}$$

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$$\left(\frac{n}{1-n}\right)^{\frac{1}{2}} = \frac{n+1}{1+n} \Rightarrow n = \frac{1}{\sqrt{p}}$$

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$$\alpha_1 + \alpha_1 = p^1$$

$$\alpha_1 + \alpha_1 = \alpha_1 + \alpha_1 q^1 = \alpha_1 (1 + q^1) = p^1$$

$$\alpha_1 + \alpha_1 q^1 = p^1 \rightarrow \alpha_1 q + \alpha_1 q^1 = \alpha_1 q (1 + q) = p^1$$

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$$\frac{\alpha_1 q (1+q)}{\alpha_1 (1+q^1)} = \frac{p^1}{p^1} = 1$$

$$q \alpha_1 (1+q) = p^1 (1+q^1) =$$

$$p^1 q^1 - p^1 q^1 - p^1 + p^1 = 0$$

$$p^1$$

$$a + ar + ar^2 = 1^3$$

$$a(1 + r + r^2) = 1^3$$

$$a = \frac{1^3}{1 + r + r^2}$$

$$\frac{r}{r} = \frac{1^3}{1 + r + r^2}$$

$$a + ar + ar^2 = 2^3$$

$$a(1 + r + r^2) = 2^3 \quad a = \frac{2^3}{1 + r + r^2}$$

$$3(1 + r + r^2) = 1^3 r$$

$$3 + 3r + 3r^2 = 1^3 r$$

$$\Delta = \frac{1 \pm \sqrt{1 - 4 \cdot 3r}}{4} = \frac{1 \pm 1}{4}$$

$$3r^2 - 1 \cdot r + 3 = 0$$

$$r_1 = 1 \rightarrow 1, 3, 9$$

$$r_2 = \frac{1}{3} \rightarrow 9, 3, 1$$

نيز لترین 9

$$S_1 = a \left(\frac{q^n - 1}{q - 1} \right) \Rightarrow \frac{1^3 - 1}{3 - 1} = \frac{1}{2} \left(\frac{2^3 - 1}{2 - 1} \right) = 2^3 - 1 \quad (\text{الف})$$

$$a_1 = a, a_2 = ar, a_3 = ar^2$$

$$\left(\frac{1^3}{3} \right) \cdot 3 = 1^3 \cdot 3$$

$$a + ar + ar^2 + ar^3$$

$$ar - a = a(q - 1)$$

$$a(q - 1), ar(q - 1), ar^2(q - 1)$$

$$ar^2 - ar = ar(q - 1)$$

$$\frac{ar(q - 1)}{a(q - 1)} = q$$

$$ar^3 - ar^2 = ar^2(q - 1)$$

$$S_n = a + a + d + \dots + a + (n-2)d + a + (n-1)d$$

$$S_n = a + (n-1)d + a + (n-2)d + \dots + a + d + a$$

$$2S_n = 2a + (n-1)d + 2a + (n-2)d + \dots$$

$$2S_n = n[2a + (n-1)d] \rightarrow S_n = \frac{n}{2}[2a + (n-1)d]$$

$$a(S_n = aq^{n-1} + aq^{n-2} + \dots + aq + a)$$

$$a, aq, aq^2, \dots, aq^{n-1} + aq = a \cdot S_n$$

$$a, aq + S_n \cdot a = a \cdot S_n$$

$$S_n(q - 1) = a(q^n - 1)$$

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