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استعاره

(1.8)

دقت! ۱۰۰٪

$$\rightarrow (1! + 3!)(2! + 4!) \rightarrow \frac{(1+2)(2+4)}{\sqrt{2} \times 4} \rightarrow \frac{6}{4\sqrt{2}} = \frac{3}{2\sqrt{2}}$$

$$5 \quad \sqrt{\frac{1}{5+\sqrt{5}}} \times \sqrt{(1+\sqrt{5})^2} = \sqrt{\frac{1}{5+\sqrt{5}}} \times \sqrt{1+2\sqrt{5}+5} = \sqrt{\frac{1}{5+\sqrt{5}}} \times \sqrt{6+2\sqrt{5}} = \sqrt{\frac{1}{5+\sqrt{5}}} \times \sqrt{\frac{1}{9} \times (5+\sqrt{5})(5+\sqrt{5})} = \frac{1}{3}$$

$$\sqrt{2}$$

$$\frac{\sqrt{2} + \sqrt{5}}{\sqrt{2} + 1} = \frac{\sqrt{5} + \sqrt{2}}{\sqrt{2}(\sqrt{5} + \sqrt{2})} = \frac{1}{\sqrt{2}}$$

t < 0

$$t^2 = 3 - \sqrt{5} + 3 + \sqrt{5} - 2\sqrt{3-5} = 2 \quad |t| = \sqrt{2} \quad t = -\sqrt{2} \times \frac{1}{\sqrt{2}} = -1$$

$$10 \quad \frac{\sqrt{2} + \sqrt{3}}{\omega - \sqrt{2}} \times \frac{\omega + \sqrt{2}}{\omega + \sqrt{2}} - 2 \frac{1}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1} = \frac{1 \cdot \sqrt{2} + 2\sqrt{2} + 3\sqrt{2} + 3\sqrt{2}}{2} = \frac{7\sqrt{2}}{2}$$

$$\times \frac{\sqrt{3}+1}{\sqrt{3}-1} = \frac{19\sqrt{2} + 19\sqrt{3}}{19} - \sqrt{3} - 1 = \sqrt{2} + \sqrt{3} - \sqrt{3} = \sqrt{2} - 1$$

$$15 \quad \frac{\sqrt{2}-1}{5+\sqrt{5}} \times \frac{5-\sqrt{5}}{5-\sqrt{5}} = \frac{5\sqrt{2}-5\sqrt{2}+5\sqrt{5}-5\sqrt{5}}{25-5} = \frac{0}{20} = 0 \quad (2-\sqrt{3})^{-1} = \frac{1}{2-\sqrt{3}} \times \frac{2+\sqrt{3}}{2+\sqrt{3}} = \frac{2+\sqrt{3}}{4-3} = 2+\sqrt{3}$$

$$\frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{\sqrt{3}-5}} = t \quad t-2 = \sqrt{5}$$

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$$20 \quad t^2 = \frac{1+\sqrt{3}-1\sqrt{3}+2\sqrt{3}}{\sqrt{3}-\sqrt{2}} = \frac{2(\sqrt{3}+\sqrt{2})}{\sqrt{3}-\sqrt{2}} \times \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}+\sqrt{2}} = \frac{2(\sqrt{3}+\sqrt{2})^2}{3-2} = 2(\sqrt{3}+\sqrt{2})^2$$

$$\sqrt{t^2} = \sqrt{2(\sqrt{3}+\sqrt{2})^2} \quad t = \sqrt{2}(\sqrt{3}+\sqrt{2}) \quad t-2 = \sqrt{5}$$

$$\sqrt{5\sqrt{2}} = 2 \frac{1}{4} \times (2^{\frac{1}{4}})^{\frac{1}{4}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{4}} = 2^{\frac{1}{4}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{4}} = 2^{\frac{1}{4} \times 4} = 2$$

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

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$$\frac{w^2 \left(\frac{1}{x} + \frac{1}{y} + a + r\sqrt{y} + 1 + r\sqrt{x} \right)}{r^2 \left(\frac{1}{x} + \frac{1}{y} + a + r\sqrt{y} + 1 + r\sqrt{x} \right)} = \frac{w^2}{r^2} = \frac{10}{10} = 1$$

1, 20

$$(a^2 + b^2 - cab)^2 (a^2 + b^2 - cab)^2 =$$

$$((a-b)^2)^2 ((a+b)^2)^2 =$$

$$\sqrt{4+r} - \sqrt{4-r} = (\sqrt{4+r} + \sqrt{4-r})^2 = (\sqrt{4+r} + \sqrt{4-r})^2 = (2\sqrt{4} - 2\sqrt{r})^2 = 4(2 - \sqrt{r})^2 = 4(4 - 4\sqrt{r} + r) = 16 - 16\sqrt{r} + 4r$$

$$A + B = 1$$

$$A = 1 - B$$

$$AB = 1 - 1 \cdot B = 1 - B = 0$$

$$(A - 1)(B + 1) = 0$$

$$B(1 - B)(1 + B) - 1 \cdot B = 0$$

$$B^2 - 1 \cdot B = 0 \quad B = 0 \text{ or } 1$$

$$A = \sqrt{\frac{1}{x}} \times \frac{1}{r} \times \frac{1}{r}$$

$$\sqrt{\frac{1}{x}} = \frac{1}{\sqrt{x}} \times \frac{1}{r} \quad \left(\frac{1}{r}\right)^2 = \frac{1}{r^2}$$

$$\frac{1}{\sqrt{x}} \times \frac{1}{r} \rightarrow \frac{1}{\sqrt{x}} = \left(\frac{1}{r}\right)^2 = \frac{1}{r^2}$$

$$\sqrt{a} = \frac{1}{\sqrt{a}}$$

$$a^{\frac{1}{2}} = \frac{1}{a^{\frac{1}{2}}} \rightarrow a^{\frac{1}{2}} = \frac{1}{a^{\frac{1}{2}}} \rightarrow a^{\frac{1}{2}} = \frac{1}{a^{\frac{1}{2}}}$$

$$\frac{1}{a} = \frac{1}{\sqrt{a}} \rightarrow \frac{1}{\sqrt{a}} = \frac{1}{\sqrt{a}} = \frac{1}{\sqrt{a}}$$

SL

$$\sqrt{x+a} - \sqrt{x-\epsilon} \times \frac{\sqrt{x+a} + \sqrt{x-\epsilon}}{\sqrt{x+a} + \sqrt{x-\epsilon}} = r$$

$$\frac{x+a - x + \epsilon}{\sqrt{x+a} + \sqrt{x-\epsilon}} = r$$

SL

$$\sqrt{x+a} + \sqrt{x-\epsilon} = \frac{a+\epsilon}{r}$$

SL

$$\frac{a}{r} + r - \epsilon = \frac{a}{r}$$

1.

۱. حاصل‌های ۵ و ۲ را با هم دارد پس از ۵ به بعد یکسان خواهند بود پس می‌توانیم از آنجا که نزدیک

$$1! + 3! = 1 + 4 = 5$$

نسبت بگیریم!

$$2! + 4! = 2 + 24 = 26 \rightarrow \text{کین} = 4 \times 5 = 20$$

$$\left. \begin{aligned} \sqrt[4]{\sqrt[3]{2^8}} &= 2^{\frac{8}{12}} = 2^{\frac{2}{3}} \\ \sqrt[4]{144} &= \sqrt[4]{81 \times 2} = 3 \times \sqrt[4]{2} \\ \sqrt{4\sqrt{2}} &= (2 \times 2)^{\frac{1}{2}} = 2^{\frac{1}{2}} \end{aligned} \right\} \left(2^{\frac{2}{3}} + \frac{1}{2} + \frac{1}{2} \right) \times 3 = 2^{\frac{8+3+12}{12}} \times 3 = 4 \times 3 = 12$$

۴-ب

دنباله هندسی $a=1$ و $q=3$

$$\frac{3^n (1 + 3 + 9 + \dots + 3^5)}{2^{n-2} (1 + 2 + 4 + \dots + 2^5)} = \frac{3^n \left(\frac{3^6 - 1}{2} \right)}{2^{n-2} \left(\frac{2^6 - 1}{1} \right)} = 52$$

دنباله هندسی $a=1$ و $q=2$

$$\frac{3^n \times 13 \times 4}{4 \times 4 \times 2^n} = \left(\frac{3}{2} \right)^n \times \frac{13 \times 4}{9} = 52 \rightarrow \left(\frac{3}{2} \right)^n = \frac{9}{4} \rightarrow n=2$$

$$\text{طبق اتحاد مزدوج} \rightarrow \left(\left(a + \frac{1}{a} \right)^2 - 2 \right)^2 = \left(a^2 + \frac{1}{a^2} \right)^2 = a^4 + \frac{1}{a^4} + 2$$

$$\frac{1}{v-4\sqrt{3}} \times \frac{v+4\sqrt{3}}{v+4\sqrt{3}} = \frac{v+4\sqrt{3}}{49-48} = v+4\sqrt{3}$$

$$a^4 + \frac{1}{a^4} + 2 = v-4\sqrt{3} + v+4\sqrt{3} + 2 = 14 \rightarrow 2^t = 14 \rightarrow \boxed{t=4}$$