

۱- $\left[\frac{(1+9)(2+4+3\sqrt{5})}{\sqrt{5}} \right] - 4\sqrt{5}$ به بعد ۵۱
 یون صفر است ۷ ۲۶

۲- $\sqrt[4]{\frac{1}{4+5\sqrt{5}}} \times \frac{(1+\sqrt{5})^2}{1+2\sqrt{5}} = \sqrt[4]{\frac{1}{4+5\sqrt{5}}} \times 2(4+5\sqrt{5})$ الف

۳- $A = (\sqrt{3}-\sqrt{5} - \sqrt{3+\sqrt{5}}) \cdot \frac{(\sqrt{2}+\sqrt{5})}{\sqrt{2}(\sqrt{5}+\sqrt{2})}$ ب

۴- $A = \frac{1}{2} (2\sqrt{5} + 3\sqrt{5} - 2(\sqrt{3-\sqrt{5}})(3+\sqrt{5}))$

۵- $A = 1$ $A = \frac{1}{2} (2\sqrt{5} + 3\sqrt{5} - 2(\sqrt{3-\sqrt{5}})(3+\sqrt{5}))$ ۹-۵

۶- $A = 1$ $A = \frac{1}{2} (2\sqrt{5} + 3\sqrt{5} - 2(\sqrt{3-\sqrt{5}})(3+\sqrt{5}))$

(تقریب و تبیین)

۷- $\frac{\sqrt{3}+\sqrt{5}}{5-\sqrt{5}} = \frac{(\sqrt{2}+\sqrt{3})(2+\sqrt{4}-\sqrt{9})}{5-\sqrt{5}} = \frac{2}{\sqrt{3}-1}$ ۳

۸- $\frac{2}{\sqrt{3}-1} \times \frac{\sqrt{2}+1}{\sqrt{2}+1} = \frac{2(\sqrt{3}+1)}{2-1} = \sqrt{2}+\sqrt{3} - \sqrt{2}-1$
 $\sqrt{2}-1$

$$ج) \frac{\sqrt{3}-1}{2\sqrt{3}} = \frac{(\sqrt{3}-1)(3+\sqrt{3})}{2\sqrt{3}} + \frac{1}{2\sqrt{3}}$$

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

$$الف) A = \sqrt{1+2\sqrt{3}} + \sqrt{\sqrt{3}+1}$$

$$A^2 = 1+2\sqrt{3} + \sqrt{3}+1 + 2(\sqrt{(1+2\sqrt{3})(\sqrt{3}+1)}) = \frac{2\sqrt{3}+2\sqrt{3}}{\sqrt{3}-\sqrt{3}}$$

$$A^2 = \frac{2\sqrt{3}+2\sqrt{3}}{\sqrt{3}-\sqrt{3}} = \frac{\sqrt{3}+1}{\sqrt{3}+1} = 2$$

$$A = 1+2\sqrt{3} \quad A = \sqrt{(1+2\sqrt{3})} \quad 2\sqrt{3} - 2 = \sqrt{3}$$

$$ج) 2^{\frac{1}{12}}, 2^{\frac{1}{6}}, 2^{\frac{1}{4}}, 2^{\frac{1}{3}}, 2$$

$$2^{\frac{1}{12}} \times 2^{\frac{1}{6}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{3}} \times 2$$

$$\frac{2^{\frac{1}{12}} \times 2^{\frac{1}{6}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{3}} \times 2}{2^{\frac{1}{12} + \frac{1}{6} + \frac{1}{4} + \frac{1}{3} + 1}} = \frac{2^{\frac{1}{12} + \frac{2}{12} + \frac{3}{12} + \frac{4}{12} + 1}}{2^{\frac{10}{12} + 1}} = \frac{2^{\frac{10}{12} + 1}}{2^{\frac{10}{12} + 1}} = 1$$

$$2^{\frac{1}{12}}, 2^{\frac{1}{6}}, 2^{\frac{1}{4}}, 2^{\frac{1}{3}}, 2$$

$$\frac{2^{\frac{1}{12}} \times 2^{\frac{1}{6}} \times 2^{\frac{1}{4}} \times 2^{\frac{1}{3}} \times 2}{2^{\frac{1}{12} + \frac{1}{6} + \frac{1}{4} + \frac{1}{3} + 1}} = \frac{2^{\frac{10}{12} + 1}}{2^{\frac{10}{12} + 1}} = 1$$

MICRO

$$((a^r + b^r)^r - 2a^r b^r)^r = (a^{4r} + b^{4r} + 2a^r b^r - 2a^r b^r)^r = 4$$

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

4-2

$$22 + 1 - 1\sqrt{12} = 22 - 14\sqrt{2} = 14(2 - \sqrt{2}) + (2 - \sqrt{2})$$

$$= 15(2 - \sqrt{2})$$

$$+ 14$$

$$((a + \frac{1}{a})^r - 2)^r$$

- V

$$(a^r + \frac{1}{a^r} + 2 - 2)^r = (a^r + \frac{1}{a^r})^r = a^{4r} + \frac{1}{a^{4r}} + 2$$

$$V - 2\sqrt{2} + \frac{1}{V - 2\sqrt{2}} + 2 = V - 2\sqrt{2} + V + 2\sqrt{2} + 2 = 14$$

$$\frac{1}{(2-\sqrt{2})^r} \cdot \frac{(2+\sqrt{2})^r}{(2+\sqrt{2})^r} = \frac{(2+\sqrt{2})^r}{(2-\sqrt{2})^r}$$

$$2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} \times 2^{\frac{r}{10}} = 2^{\frac{r}{10} \times 10} = 2^r$$

- 1

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

$$(2Va^{\frac{10}{r}})^r = a$$

- 9

$$2^{r1} a^{10} = a$$

$$2^{r1} a^{10} = a$$

$$2^{r1} a^{10} = a$$

$$17 = (\frac{1}{a})^r + \frac{1}{\sqrt{2}V} + \frac{1}{a}$$

MICRO

لنه ا سب است پس - غرق است

$$\frac{r\sqrt{r}-r}{1+r\sqrt{r}} = \frac{r(\sqrt{r}-1)}{1+\sqrt{r}} \cdot \frac{\sqrt{r}-1}{\sqrt{r}-1} = \frac{r(\sqrt{r}-1)}{r}$$

$$\frac{r(r+1-r\sqrt{r})}{r} = r\sqrt{r} \frac{(r-\sqrt{r})}{r} = r(r-\sqrt{r})$$

$$(\sqrt{n+a} - \sqrt{n-\varepsilon} - r) (\sqrt{n+a} + \sqrt{n-\varepsilon} - r) = 0$$

$$(\sqrt{n+a} - r)^2 = (\sqrt{n-\varepsilon})^2 = n+a+\varepsilon - 2\sqrt{n+a} - n+\varepsilon=0$$

$$a+\varepsilon = 2\sqrt{n+a}$$

$$\sqrt{n+a} = \sqrt{n-\varepsilon} - r$$

$$\sqrt{n+a} + \sqrt{n-\varepsilon} - r = \sqrt{n-\varepsilon} - r + \sqrt{n-\varepsilon}$$