

۱! = 1
 ۳! = ۳ × ۲ × ۱ = ۶
 ۲! = ۲ × ۱
 ۴! = ۴ × ۳ × ۲ × ۱ = ۲۴

صحن عامل ۲ × ۵
 دارد

(۷) (۲۶) = ۲۶

$$\sqrt[4]{\frac{1}{4+\sqrt{4}}} \times \sqrt[4]{(1+\sqrt{4})^3} = \sqrt[4]{\frac{(1+\sqrt{4})^3}{4+\sqrt{4}}} = \sqrt[4]{\frac{1+2\sqrt{4}}{4+\sqrt{4}}} = \sqrt[4]{2}$$

$$\frac{\sqrt{2+\sqrt{5}}}{\sqrt{2(\sqrt{5}+\sqrt{4})}} \sqrt{(\sqrt{3-\sqrt{5}} - \sqrt{2+\sqrt{5}})^2} = \frac{1}{\sqrt{2}} \times \sqrt{3-\sqrt{5}+2+\sqrt{5}-2(2)} = \frac{1}{\sqrt{2}} \times \sqrt{-1} = \frac{1}{\sqrt{2}} \times i = \frac{i}{\sqrt{2}}$$

(-1)

$$\frac{2\sqrt{2}+3\sqrt{3}}{5-\sqrt{6}} - \frac{2}{\sqrt{9}-1} = \frac{2\sqrt{2}+3\sqrt{3}}{5-\sqrt{6}} \times \frac{5+\sqrt{6}}{5+\sqrt{6}} = \frac{10\sqrt{2}+15\sqrt{3}+2\sqrt{12}+3\sqrt{18}}{25-6} = \frac{10\sqrt{2}+15\sqrt{3}+4\sqrt{3}+9\sqrt{2}}{19} = \frac{19\sqrt{2}+19\sqrt{3}}{19} = \sqrt{2}+\sqrt{3}$$

$$\frac{3\sqrt{3}-1}{4+\sqrt{2}} \times \frac{4-\sqrt{2}}{4-\sqrt{2}} = \frac{12\sqrt{3}-4}{14-2} = \frac{12\sqrt{3}-4}{12} = \frac{3\sqrt{3}-1}{3}$$

$$\frac{1}{2-\sqrt{3}} \times \frac{2+\sqrt{3}}{2+\sqrt{3}} = \frac{2+\sqrt{3}}{4-3} = 2+\sqrt{3}$$

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

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

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

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$$\frac{3^2(1+3+9+27+81+243)}{3^2(\frac{1}{3}+\frac{1}{9}+1+3+9+27)} = 52$$

$$\frac{3^2(364)}{3^2(\frac{27}{3})} = 52$$

$$1/9 \times 2^2 = 3^2 \times 364 \Rightarrow (\frac{2}{3})^2 = \frac{119}{364} = 2,25 = (1,5)^2 \Rightarrow 2$$

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

$$(a-b)^{\frac{1}{2}} \left(\frac{1}{\sqrt{a-b}} - \frac{1}{\sqrt{a+b}} \right)^{\frac{1}{2}} = \sqrt{a-b} + \sqrt{a+b} - 2\sqrt{a}$$

$$\in (1, 2)$$

$$(2\sqrt{a-b} - 2\sqrt{a})^{\frac{1}{2}}$$

$$\frac{2\sqrt{a-b} - 2\sqrt{a}}{2\sqrt{a-b} - 2\sqrt{a}} = 1 \cdot \sqrt{a-b}$$

$$(a + \frac{1}{a})^{\frac{1}{2}} - \sqrt{a} = (a + \frac{1}{a} + 1 - 1)^{\frac{1}{2}} = (a + \frac{1}{a})^{\frac{1}{2}} = \left(\sqrt{a-b} + \frac{1}{\sqrt{a-b}} \right)^{\frac{1}{2}}$$

$$\frac{1}{\sqrt{a-b}} \times \frac{1}{\sqrt{a-b}} = \frac{1}{a-b}$$

$$A = \sqrt[10]{10} \times \sqrt[5]{5} = \sqrt[2]{2} \times \sqrt[5]{5} = \sqrt[10]{2^2 \times 5^2} = \sqrt[10]{20} = \sqrt[10]{20}$$

$$(1)^{-\frac{1}{2}} = (2^{\frac{1}{2}})^{-\frac{1}{2}} = (2)^{-\frac{1}{4}} = \frac{1}{\sqrt[4]{2}}$$

$$\sqrt[3]{a} = \sqrt[3]{a} \cdot \sqrt[3]{a^{\frac{10}{3}}}$$

$$a^{\frac{1}{3}} = \sqrt[3]{a} \cdot \sqrt[3]{a^{\frac{10}{3}}}$$

$$\frac{1}{\sqrt[3]{a}} = \frac{a^{\frac{10}{3}}}{a^{\frac{1}{3}}} = a^{\frac{10}{3} - \frac{1}{3}} = a^{\frac{9}{3}} = a^3 = \frac{1}{a^3} = \frac{1}{\sqrt[3]{a^9}}$$

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

$$\frac{\sqrt{a}(\sqrt{a}-1)}{\sqrt{a}+1} \times \frac{\sqrt{a}-1}{\sqrt{a}-1} = \frac{\sqrt{a}(\sqrt{a}-1)^2}{a-1}$$

$$\frac{12-6\sqrt{a}}{a} = \frac{6(2-\sqrt{a})}{a}$$

$$(\sqrt{x+a} - \sqrt{x-a}) (\sqrt{x+a} + \sqrt{x-a}) = x - a$$

$$x+a - x+a = x - a$$

$$a - a$$

$$\frac{a}{x} + x - x = \left(\frac{a}{x} \right)$$