

عامل ۲ و ۵ پر سے یکساں = ۵

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$$(1! + 3! + 5! + \dots + 25!) (2! + 4! + 6! + \dots + 26!) \quad (1)$$

$$(1 + 9 + 25 + \dots + 625) (2 + 16 + 36 + \dots + 676) = 42 \rightarrow 2 = \text{رقم یکسان}$$

$$\text{الف}, \sqrt[4]{(4+\sqrt{7})^{-1}} \sqrt{1+\sqrt{7}} = \sqrt[4]{\frac{1}{4+\sqrt{7}}} \times \sqrt[4]{(1+\sqrt{7})^2} = \quad (2)$$

$$\sqrt[4]{\frac{1}{4+\sqrt{7}}} \times \sqrt[4]{1+2\sqrt{7}} = \sqrt[4]{\frac{1+2\sqrt{7}}{4+\sqrt{7}}} = \sqrt[4]{2}$$

$$\text{ب}, A = (\sqrt{3-\sqrt{5}} - \sqrt{3+\sqrt{5}})$$

$$A^2 = 3 - \sqrt{5} + 3 + \sqrt{5} - 2\sqrt{(3-\sqrt{5})(3+\sqrt{5})} = 2 \rightarrow A \xrightarrow{A < 0} -\sqrt{2}$$

$$\left(\frac{\sqrt{2} + \sqrt{5}}{\sqrt{10} + 2} \right) \times -\sqrt{2} = -\frac{2 + \sqrt{10}}{\sqrt{10} + 2} = -1$$

$$\text{الف}, \frac{\sqrt{8} + \sqrt{27}}{5 - \sqrt{6}} = \frac{2\sqrt{2} + 3\sqrt{3}}{5 - \sqrt{6}} \times \frac{5 + \sqrt{6}}{5 + \sqrt{6}} = \frac{(2\sqrt{2} + 3\sqrt{3})(5 + \sqrt{6})}{25 - 6} = \quad (3)$$

$$\frac{19\sqrt{2} + 19\sqrt{3}}{19} = \sqrt{2} + \sqrt{3}$$

$$\frac{-2}{\sqrt{9} - 1} = \frac{-2}{\sqrt{3} - 1} \times \frac{\sqrt{3} + 1}{\sqrt{3} + 1} = -\sqrt{3} - 1$$

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

$$\text{ب}, \frac{\sqrt{27} - 1}{4 + \sqrt{3}} = \frac{3\sqrt{3} - 1}{4 + \sqrt{3}} \times \frac{4 - \sqrt{3}}{4 - \sqrt{3}} = \frac{13\sqrt{3} - 13}{13} = \sqrt{3} - 1$$

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

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

Subject: _____ Month: _____ Day: _____
 Year: _____

1

الف

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

$$\sqrt{3}-\sqrt{2} - \sqrt{3} - \sqrt{2} - 2 = 4 + 2\sqrt{2} = 2(2 + \sqrt{2})$$

ب

$$\sqrt[12]{2^8} \times \sqrt[4]{2^6} \times \sqrt[6]{2^9} \times \sqrt[3]{2^4} = \sqrt[12]{2^8} \times \sqrt[4]{2^6} \times \sqrt[6]{2^9} \times \sqrt[3]{2^4} = \sqrt[12]{2^8} \times \sqrt[4]{2^6} \times \sqrt[6]{2^9} \times \sqrt[3]{2^4}$$

$$9 \times \sqrt[12]{2^{12}} = 9 \times 2 = 18$$

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$$\frac{r^x (1 + r + r^2 + r^3 + r^4 + r^5)}{r^x (r^{-1} + r^{-2} + 1 + r + r^2 + r^3)} = \omega r \rightarrow \left(\frac{r}{r}\right)^x \times \frac{394}{1\omega, \vee \omega} = \omega r \rightarrow$$

$$\left(\frac{r}{r}\right)^x = \frac{\omega r \times 1\omega, \vee \omega}{1\omega, \vee \omega} = \left(\frac{r}{r}\right)^x = \frac{1\omega, \vee \omega}{r}$$

$$\frac{1\omega, \vee \omega}{r} = \frac{q}{r} \rightarrow \left(\frac{r}{r}\right)^x = \frac{q}{r} \rightarrow x = 1$$

$$(\sqrt{5+4} - \sqrt{5-2})^2 = (\sqrt{9} + \sqrt{3} - \sqrt{3} - 2)^2 = (2\sqrt{3} - 2)^2 = 4(3 - 2\sqrt{3} + 2) = 4(5 - 2\sqrt{3}) = 14 \rightarrow t = 14$$

$$\left(a + \frac{1}{a}\right)^2 - 2 = \left(a^2 + \frac{1}{a^2} + 2 - 2\right)^2 = a^4 + \frac{1}{a^4} + 2 = 9 - 4\sqrt{3} + \frac{v+4\sqrt{3}}{4-4\omega} = 14 \rightarrow t = 14$$

$$A = \sqrt[10]{r^2 \sqrt[5]{r^4}} \times r^{\frac{4}{5}} = \sqrt[10]{r^2} \times \sqrt[5]{r^4} \times r^{\frac{4}{5}} =$$

$$\sqrt[10]{r^{\frac{10}{5}}} \times r^{\frac{4}{5}} = \left(r^{\frac{10}{5}}\right)^{\frac{1}{10}} \times r^{\frac{4}{5}} = r^{\frac{1}{5}} \times r^{\frac{4}{5}} = r^1$$

$$(rA)^{\frac{1}{5}} (r^{\frac{1}{5}})^{-\frac{1}{5}} = r^{-1} = \frac{1}{r} = \omega / \omega$$

$$a^{\frac{1}{\sqrt{r}}} = r \sqrt[r]{a^{\frac{1}{\sqrt{r}}}} \rightarrow r \sqrt[r]{a^{\frac{1}{\sqrt{r}}}} = 1 + \frac{1}{a} = r \sqrt[r]{r}$$

9

$$\frac{r \sqrt[r]{r} - r}{1 + \sqrt[r]{r}} \times \frac{\sqrt[r]{r} - 1}{\sqrt[r]{r} - 1} = \frac{r (\sqrt[r]{r} - 1)^r}{r} = \frac{r (r - \sqrt[r]{r})}{r} =$$

$$r - r \sqrt[r]{r}$$

$$y = \sqrt{x+a}, \quad z = \sqrt{x-f} \rightarrow y - z = r$$

10

$$y^2 - z^2 = (x+a) - (x-f) = a+f$$

$$\cancel{(y-z)}_r (y+z) = a+f \rightarrow r(y+z) = a+f \rightarrow$$

$$y+z = \frac{a+f}{r}$$

$$y+z-r = \frac{a+f}{r} - r = \frac{a}{r}$$