

هم دختر B

ساینا اودی تکلیف ۲۱

(۱)

$$(1! + 3! + 5! + \dots + 25!)(2! + 4! + 6! + \dots + 24!)$$

چون ۲۵ و ۲۴ دارند یکسان است

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$$(1! + 3!)(2! + 4!) = (1 + 6)(2 + 24) = 7 \times 26 = 182$$

یکان = ۲

$$\text{الف)} \frac{2\sqrt{2} + 3\sqrt{3}}{5 - \sqrt{4}} - \frac{2}{\sqrt{3} - 1} = \frac{(2\sqrt{2} + 3\sqrt{3})(5 + \sqrt{4}) - 19(\sqrt{3} + 1)}{2}$$

$$\frac{21\sqrt{3} + 10\sqrt{2} - 19\sqrt{3} - 19}{19} = \frac{2\sqrt{2} + 10\sqrt{3} - 19}{19}$$

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$$\text{ب)} \left(\frac{\sqrt{2} + \sqrt{5}}{\sqrt{1} + 2} \right) (\sqrt{3} - \sqrt{5} - \sqrt{3} + \sqrt{5})$$

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

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

$$\text{الف)} \frac{\sqrt{1} + \sqrt{27}}{5 - \sqrt{4}} - 2(\sqrt{9} - 1)^{-1} = \sqrt{2} + \sqrt{3} - \sqrt{3} - 1 = \sqrt{2} - 1$$

$$\frac{2\sqrt{2} + 3\sqrt{3}}{5 - 2} \times \frac{5 + 2}{5 + 2} = \frac{14\sqrt{2} + 14\sqrt{3}}{9} = \frac{2\sqrt{2} + 2\sqrt{3}}{1}$$

$$\rightarrow 2 \left(\frac{1}{\sqrt{3} - 1} \right) \times \frac{\sqrt{3} + 1}{\sqrt{3} + 1} = \frac{2(\sqrt{3} + 1)}{2} = \sqrt{3} + 1$$

$$\text{ب)} \frac{\sqrt{27} - 1}{2 + \sqrt{3}} + (2 - \sqrt{3})^{-1} = \sqrt{3} - 1 + 2 + \sqrt{3} = 2\sqrt{3} + 1$$

$$\frac{3\sqrt{3} - 1}{2 + \sqrt{3}} \times \frac{2 - \sqrt{3}}{2 - \sqrt{3}} = \frac{12\sqrt{3} - 9 - 2 + \sqrt{3}}{1} = \frac{13\sqrt{3} - 11}{1}$$

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

(الف) $\frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{2}-\sqrt{2}} - 2 =$ (ج) $\frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{2}-\sqrt{2}} \times \frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}} = (\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1})(\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}) = \sqrt{1+\sqrt{3}} + \sqrt{1+\sqrt{3}} + \sqrt{1+\sqrt{3}} + \sqrt{1+\sqrt{3}} = 4\sqrt{1+\sqrt{3}}$

$$\frac{p^x + p^{x+1} + p^{x+2} + p^{x+3} + p^{x+4} + p^{x+5}}{p^{x-1} + p^{x-1} + p^x + p^{x+1} + p^{x+2} + p^{x+3}} = 2p \quad (a)$$

$$\left(\frac{w}{r}\right)^2 = \Delta r \times \frac{4p}{\pi \Delta \epsilon} = \Delta r \times \frac{4p}{1 \times 10^4} = \frac{420}{100}$$

$$(a+b)^2 (a-b)^2 = t(r-\sqrt{r}) \quad t = \frac{10}{-2\sqrt{r} - 14\sqrt{4}} = \frac{4}{-1\sqrt{r}(r+4\sqrt{r})}$$

$$2\sqrt{4}x - \varepsilon = -1\sqrt{4} \quad t_2 = \frac{-1\sqrt{4}}{2-\sqrt{4}} \times \frac{2+\sqrt{4}}{2+\sqrt{4}} = -14\sqrt{4} - 2\varepsilon\sqrt{4}$$

$$\left(V - \varepsilon \sqrt{u} + \frac{1}{V - \varepsilon \sqrt{u}} - \varepsilon = V - \varepsilon \sqrt{u} + \frac{1}{V - \varepsilon \sqrt{u}} - \varepsilon = 10 - 1\sqrt{u} \right)$$

$$A = \sqrt[2]{\varepsilon \sqrt{14} \left(\frac{1}{r}\right)^{-\frac{\varepsilon}{r}}} \quad (1)$$

$$(rA)^{-\frac{1}{r}} = \left(r \times r^{\frac{\varepsilon}{r}} \times r^{\frac{\varepsilon}{r}} \times r^{\frac{\varepsilon}{r}}\right)^{-\frac{1}{r}} = r^{\left(1 + \frac{\varepsilon}{r} + \frac{\varepsilon}{r} + \frac{\varepsilon}{r}\right) \times \frac{-1}{r}} = r^{\frac{41}{12} \times \frac{-1}{r}} = r^{-\frac{41}{12r}}$$

$$= r^{-\frac{41}{12r}} \rightarrow (rA)^{-\frac{1}{r}} = \left(\frac{1}{r}\right)^{\frac{41}{12r}} = \sqrt[12]{r^{-41}}$$

$$a^{\frac{1}{r}} = r^w a^{\frac{1}{r}} \rightarrow a^{-r} = r^w \rightarrow \frac{1}{a^r} = r^w \rightarrow \frac{1}{a} = r^w \sqrt[r]{r} \quad (9)$$

$$\frac{1}{a} - r = \frac{r\sqrt[r]{r} - r}{1} \quad \boxed{4 - r\sqrt[r]{r} \leq r(r - \sqrt[r]{r})}$$

$r \leq r$ ✓

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

$$\frac{r(1 + \sqrt[r]{r} - 2\sqrt[r]{r})}{r} = \frac{r + 1 - 2\sqrt[r]{r}}{r} = \frac{14 - 2\sqrt[r]{r}}{r} = 4 - \sqrt[r]{r}$$

$$-\sqrt{x+a} + \sqrt{x-\varepsilon} + r = 0 \quad (10)$$

$$\sqrt{x+a} + \sqrt{x-\varepsilon} - r = ?$$

$$r\sqrt{x-\varepsilon} = ? \quad x \geq \varepsilon$$

$$r|x| - \varepsilon \Rightarrow rx = \varepsilon \rightarrow x = \frac{\varepsilon}{r} \rightarrow a = r$$

$$\sqrt{x+a} - r = 0$$

٢-الف

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

$$\frac{\sqrt{2+\sqrt{5}}}{\sqrt{10}+2} = \frac{\sqrt{2+\sqrt{5}}}{\sqrt{2}(\sqrt{5}+\sqrt{2})} = \frac{1}{\sqrt{2}}$$

٢-ب

$$(\underbrace{\sqrt{3-\sqrt{5}} - \sqrt{3+\sqrt{5}}}_b)^2 = 3-\sqrt{5} + 3+\sqrt{5} - 2\sqrt{9-5} = 4-4 = 0$$

$$\rightarrow b^2 = 0 \xrightarrow{b < 0} b = -\sqrt{2} \rightarrow \frac{1}{\sqrt{2}} \times (-\sqrt{2}) = -1$$

٣-الف

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

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

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

$$\frac{\sqrt{2}(\sqrt{\sqrt{3}+2})}{\sqrt{\sqrt{3}-2}} = \sqrt{2} \sqrt{\frac{\sqrt{3}+2}{\sqrt{3}-2}} = \sqrt{2} \sqrt{\frac{(\sqrt{3}+2)^2}{3-2}} = \sqrt{2}(\sqrt{3}+2) = \sqrt{4}+2 \xrightarrow{-2} \text{عبارة} = \sqrt{4}$$

$$(a^2 + b^2 - 2ab)^2 = (a-b)^4$$

-4

$$(a^2 + b^2 + 2ab)^2 = (a+b)^4 \rightarrow (a^2 - b^2)^2$$

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

$$24 \quad 1 \quad 1\sqrt{12} = 32 - 14\sqrt{3} = 14(2-\sqrt{3}) \rightarrow \boxed{t=14}$$

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

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

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

$$A = \sqrt[10]{4^3 \times 6^2} (2)^{-1(-\frac{4}{5})} = (2^2)^{\frac{1}{5}} \times 2^{\frac{4}{5}} = 2^{\frac{6}{5}} = 4$$

$$2A = 8 \rightarrow (2A)^{-\frac{1}{5}} = \sqrt[5]{\frac{1}{8}} = \frac{1}{2} = \frac{1}{2} \cdot 1$$

د عبارت داده شده در صورت توان یاد آور اتحاد مزدوج است ...!

$$\underbrace{(\sqrt{n+a} - \sqrt{n-4})}_r \underbrace{(\sqrt{n+a} + \sqrt{n-4})}_t = n+a - n - (-4) = a+4$$

$$rt = a+4 \rightarrow t = \frac{a}{r} + r \rightarrow t-r = \frac{a}{r} + r - r = \frac{a}{r}$$