

هم رتوان ۲

تکلیف ۲۱

بیست و شش

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

صفر

$$9 \times 7 \Rightarrow 2$$

$$\sqrt[4]{(1+\sqrt{7})} \sqrt[4]{1+\sqrt{7}}$$

$$\sqrt[4]{\frac{1}{1+\sqrt{7}}} \times \sqrt[4]{(1+\sqrt{7})^2} \rightarrow \sqrt[4]{\frac{1}{1+\sqrt{7}}} \times \sqrt[4]{(1+\sqrt{7})^2} = \sqrt[4]{2(1+\sqrt{7})}$$

$$b) \left(\frac{\sqrt{2+\sqrt{5}}}{\sqrt{10+2}} \right) (\sqrt{3-\sqrt{5}} - \sqrt{3+\sqrt{5}}) \rightarrow \left(\frac{1}{2} (\sqrt{3-\sqrt{5}} - \sqrt{3+\sqrt{5}}) \right)$$

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

$$a) \frac{2\sqrt{2} + 3\sqrt{3}}{5-\sqrt{6}} \times \frac{5+\sqrt{6}}{5+\sqrt{6}} = \frac{10\sqrt{2} + 15\sqrt{3} + 15\sqrt{3} + 18}{19}$$

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

$$b) \frac{\sqrt{27}-1}{4+\sqrt{3}} + (2-\sqrt{3})^{-1} \rightarrow \frac{3\sqrt{3}-1}{4+\sqrt{3}} \times \frac{4-\sqrt{3}}{4-\sqrt{3}} =$$

$$\frac{12\sqrt{3} + \sqrt{3} - 4 - 9}{19} = \sqrt{3} - 1 + \left(\frac{1}{2-\sqrt{3}} \times \frac{2+\sqrt{3}}{2+\sqrt{3}} \right) = 1 + 2\sqrt{3}$$

الف)
$$\frac{\sqrt{1+\sqrt{3}} + \sqrt{\sqrt{3}-1}}{\sqrt{\sqrt{3}-52}}$$

A

Ⓐ
$$A^2 = \frac{1 + \sqrt{3} - 1 + 2\sqrt{(1+\sqrt{3})(\sqrt{3}-1)}}{\sqrt{3}-52}$$

$$\sqrt{4+2-2} = \sqrt{4}$$

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

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

ب)
$$\sqrt[3]{1} \times \sqrt[3]{12} \times \sqrt[3]{13} = \sqrt[3]{1 \times 12 \times 13}$$

$$\rightarrow \frac{1 \times 12 \times 13 \times 14 \times 15 \times 16 \times 17 \times 18 \times 19 \times 20}{2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2}$$

$$1 \times 12 \times 13 = 156$$

$$156 \times 14 = 2184$$

$$2184 \times 15 = 32760$$

$$32760 \times 16 = 524160$$

$$524160 \times 17 = 8910720$$

$$8910720 \times 18 = 160392960$$

$$160392960 \times 19 = 3047466240$$

$$3047466240 \times 20 = 60949324800$$

$$\rightarrow 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$$

$$\rightarrow 2^{10} = 1024$$

$$(a^2 + b^2 - 2ab)(a^2 + b^2 + 2ab) = t(1 - \sqrt{2})$$

$$\frac{[(a^2 + b^2 - 2ab)(a^2 + b^2 + 2ab)]^2}{(a-b)^2(a+b)^2} \rightarrow \frac{[(a-b)(a+b)]^2}{(a-b)^2(a+b)^2}$$

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

$$(2\sqrt{4-2} - 2\sqrt{4+2})^2 \rightarrow 4 - 8\sqrt{2}$$

$$a = \sqrt{1-2\sqrt{2}} \rightarrow \sqrt{(1-\sqrt{2})^2} \rightarrow \sqrt{1-\sqrt{2}}$$

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

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

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$$\sqrt{1-2\sqrt{2}} + \frac{1}{\sqrt{1-2\sqrt{2}}} \rightarrow 14$$

$$14 = 2t$$

b = 7

$$A = \sqrt{12} \times \left(\frac{1}{2}\right)^{\frac{1}{2}}$$

$$\sqrt{12} \times \frac{1}{2} \rightarrow \sqrt{12} = 2\sqrt{3}$$

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

$$\sqrt{a} = \sqrt{4} \times \sqrt{a}$$

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

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

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

$$\frac{1}{a^2} = \frac{1}{25} \rightarrow \frac{1}{a} = \frac{1}{5} \rightarrow a = 5$$

$$\sqrt{n+a} - \sqrt{n-t} = 1$$

$$\sqrt{n+a} - \sqrt{n-t} = 1$$

$$(\sqrt{n+a} - \sqrt{n-t})(\sqrt{n+a} + \sqrt{n-t}) = 1 \times (\sqrt{n+a} + \sqrt{n-t})$$

$$\frac{n+a - (n-t)}{\sqrt{n+a} + \sqrt{n-t}} = \frac{a+t}{\sqrt{n+a} + \sqrt{n-t}} = 1$$

$$\frac{a+t}{\sqrt{n+a} + \sqrt{n-t}} = 1$$