

۱۴، ۵ آرامشادی

بکان لایه به $\rightarrow$ صف $\rightarrow (1! + 3! + \dots) \times (2! + 4! + \dots) \rightarrow \dots \rightarrow \boxed{2}$ (۱، ۵)

$\rightarrow V$ (۴)

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

ب) $(\frac{1}{\sqrt{2}}) (\sqrt{(\sqrt{2}-\sqrt{5}) - \sqrt{2+\sqrt{5}}})^2 = \frac{1}{\sqrt{2}} \times (-\sqrt{2}) = -1 \checkmark$ (۲)

الف) $\frac{(2\sqrt{2} + 5\sqrt{5})(8+\sqrt{2})}{19} - \frac{2(\sqrt{2}+1)}{2} = \sqrt{2} - 1 \checkmark$

ب) $\frac{(\sqrt{2}-1)(2\sqrt{2}+1)(5-\sqrt{5})}{14-22} + \frac{2+\sqrt{2}}{2-\sqrt{2}} = 2\sqrt{2}+1 \checkmark$

الف) $\frac{\sqrt{2}\sqrt{2+\sqrt{5}}}{\sqrt{2}-\sqrt{5}} - 2 = \frac{\sqrt{2}(\sqrt{2+\sqrt{5}})^2}{2-5} - 2 = \frac{2(2+\sqrt{5})}{-3} - 2 = -\frac{4+2\sqrt{5}}{3} - 2$ (۱)

ب) $\frac{1}{2\sqrt{2}} \times \frac{1}{2\sqrt{2}} \times \frac{1}{2\sqrt{2}} \times \frac{1}{2\sqrt{2}} = 1 \checkmark$

$\frac{(2\sqrt{2})^{2x}}{(\frac{2\sqrt{2}}{2})^{2x}} = 1 \Rightarrow \frac{2^x \times 2^{2x}}{2^x \times 2^{2x}} = 1 \rightarrow \frac{2^{3x}}{2^{3x}} = \frac{9}{2} \Rightarrow x = 2 \checkmark$ (۲)

$(a^2 + \frac{1}{a^2} + 4 - 2)^2 = (2 - \sqrt{2} + \frac{2+\sqrt{2}}{2-2})^2 = 14 \rightarrow 2^t = 14 \Rightarrow t = 2 \checkmark$ (۲)

$(a^2 + b^2 + c^2 + d^2 - 2a^2b^2)^2 = t(2 - \sqrt{2}) \rightarrow \frac{2^2}{2 - \sqrt{2}} = t \rightarrow t = \frac{4}{2 - \sqrt{2}} \checkmark$ (۲)

$2^{\frac{2}{3}} \times 4^{\frac{2}{3}} = 8 \rightarrow A = 8 \checkmark \rightarrow 1^{\frac{1}{2}} = \frac{1}{2} \checkmark$ (۲)

$\sqrt[4]{a} = 2\sqrt{2} \times a^{\frac{1}{4}} \times \sqrt[4]{a} \rightarrow a = \frac{1}{\sqrt{2}} \Rightarrow \frac{\sqrt{2}\sqrt{2} - 2}{\sqrt{2} + 1} = \frac{2(\sqrt{2}-1)^2}{2} = 2(\sqrt{2}-1)^2$ (۲)

$= 2 - \sqrt{2} \checkmark$

$\sqrt{2a+a} + \sqrt{a-2} - 2 = 2 + \sqrt{a-2} + \sqrt{a-2} - 2 = 2\sqrt{a-2}$ (۱۰)

دو عبارت داده شده فرد و زوج به نظر می رسد:

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

$(\sqrt{n+a} + \sqrt{n-4}) \times 2 = a+4 \rightarrow \sqrt{n+a} + \sqrt{n-4} - 2 = \frac{a+4}{2} - 2 = \frac{a}{2}$ (۲)

الف ٤

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

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

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

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

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$$(\sqrt{4}-2 + \sqrt{4} + 2 - 2\sqrt{(\sqrt{4}-2)(\sqrt{4}+2)})^2 = (2\sqrt{4} - 2\sqrt{2})^2 = 14(2-\sqrt{2})$$