

نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۱۱..... کلاس: دهم پسر A.....

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$$((a+b)^r - (a-b)^r)^r = (a^r + b^r + r a^r b^r - r a^r b^r)^r = (a^r + b^r)^r$$

(2)

$$= (\sqrt{4} - r + \sqrt{4} + r - r(\sqrt{4-r}(\sqrt{4+r})))^r = (r\sqrt{4} - r\sqrt{4})^r = t(r\sqrt{4})$$

6

$$r^r + 1 - 1\sqrt{12} = r^r + t\sqrt{r}$$

$$r^r - 14\sqrt{r} = r^r + t\sqrt{r} \Rightarrow t = 14 \checkmark$$

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

(2)

$$r - r\sqrt{r} + \frac{1}{r - r\sqrt{r}} + r = r^r \Rightarrow r - r\sqrt{r} + r + r\sqrt{r} + r = r^r \Rightarrow 14 = r^r$$

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$$\Rightarrow t = r \checkmark$$

$$\frac{10\sqrt{10}}{\sqrt{10}} \cdot \frac{r\sqrt{r}}{\sqrt{r}} = \frac{10\sqrt{10}}{\sqrt{10}} \cdot \frac{r\sqrt{r}}{\sqrt{r}} = \frac{10\sqrt{r}}{\sqrt{r}} = r^r = r = A \checkmark$$

(2)

$$(r+r)^{\frac{1}{r}} = (\frac{1}{r})^{\frac{1}{r}} = \frac{1}{r} \checkmark$$

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$$\frac{a^{\frac{10}{r}}}{\sqrt{r}} = \sqrt{r} \sqrt{a} \Rightarrow \sqrt{a^{10}} = r^r \sqrt{a} \Rightarrow \sqrt{a^{10}} = r^r \sqrt{a} = r^r \sqrt{a} \Rightarrow a^r = r^r$$

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$$\frac{\frac{1}{\sqrt{r}} - r}{1 + \sqrt{r}} = \frac{r - r\sqrt{r}}{1 + \sqrt{r}} = \frac{1 - r\sqrt{r}}{\sqrt{r} + 1}$$

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$$\frac{(\sqrt{r+a} + \sqrt{r-a}) \cdot \frac{\sqrt{r+a} - \sqrt{r-a}}{\sqrt{r+a} - \sqrt{r-a}}}{\sqrt{r+a} - \sqrt{r-a}} = \frac{r+a - r+a}{\sqrt{r+a} - \sqrt{r-a}} = \frac{a+r}{r}$$

(2)

$$\frac{a+r}{r} - r = \frac{a-r-r}{r} = \frac{a-1}{r} \quad \boxed{\frac{a}{r}}$$

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$$(4 + \sqrt{5})^{-1} = \frac{1}{4 + \sqrt{5}} \times \frac{4 - \sqrt{5}}{4 - \sqrt{5}} = \frac{4 - \sqrt{5}}{9} = \frac{8 - 2\sqrt{5}}{18} = \frac{(1 - \sqrt{5})^2}{18}$$

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صورت فعال $\rightarrow \int \frac{(1 - \sqrt{5})^2}{18} \times \sqrt{1 + \sqrt{5}} = \frac{\sqrt{1 - \sqrt{5}} \sqrt{1 + \sqrt{5}}}{\sqrt{18}} = \frac{\sqrt{4}}{\sqrt{18}} = \boxed{\sqrt{\frac{2}{9}}}$

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

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$$\left. \begin{array}{l} \frac{1}{2 - \sqrt{3}} \times \frac{2 + \sqrt{3}}{2 + \sqrt{3}} = 2 + \sqrt{3} \\ \frac{2\sqrt{3} - 1}{4 + \sqrt{3}} \times \frac{4 - \sqrt{3}}{4 - \sqrt{3}} = \sqrt{3} - 1 \end{array} \right\} \rightarrow \text{جواب} = 2\sqrt{3} + 1$$

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

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

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

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$$\sqrt[n]{a} = r v a^{\frac{1}{n}} \rightarrow a^r = \frac{1}{r v} \rightarrow a = \frac{1}{3\sqrt{3}}$$

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$$\left(\frac{1}{a} - 3\right) = 3\sqrt{3} - 3 = 3(\sqrt{3} - 1)$$

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