

۱۴,۲۵

نام و نام خانوادگی طرابت کریم پاسخنامه تشریحی تکلیف شماره ۲۱ کلاس دهم دفتر B

$$(11+31+51+\dots+251)(31+41+51+\dots+251) = 4 \times 7 = 28$$

رقم یکن ← ۲

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

$$\frac{(1+\sqrt{5})(4-\sqrt{5})}{14-\sqrt{5}} \rightarrow \frac{14}{9} = 2 \rightarrow \sqrt[4]{2}$$

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

$$= 2 - \sqrt{5}$$

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$$\sqrt{x+\sqrt{y}} - 2(\sqrt{y}-1)^{-1} = \sqrt{x} + \sqrt{y} - \sqrt{y} - 1 = \sqrt{x} - 1$$

$$\frac{(2\sqrt{2}+3\sqrt{3})(5+\sqrt{6})}{25-6} = \frac{19\sqrt{2}+19\sqrt{3}}{19} = \sqrt{2} + \sqrt{3} - \frac{2}{\sqrt{2}-1} = \frac{2(\sqrt{2}-1)}{\sqrt{2}-1} = \sqrt{2} + 1$$

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

$$\frac{(2\sqrt{2}-1)(4-\sqrt{2})}{12-2} = \frac{-12+10\sqrt{2}}{10} = -1+\sqrt{2} \quad \frac{1}{2-\sqrt{2}} = \frac{2+\sqrt{2}}{4-2} = \frac{2+\sqrt{2}}{2}$$

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$$\left(\sqrt{1+\sqrt{2}} + \sqrt{2} - 1 \right)^2 \rightarrow (1+\sqrt{2}) + (\sqrt{2}-1) + 2\sqrt{(1+\sqrt{2})(\sqrt{2}-1)}$$

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

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$$\frac{2\sqrt{2}+2\sqrt{2}}{\sqrt{2}-\sqrt{2}} \rightarrow \frac{2(\sqrt{2}+\sqrt{2})}{\sqrt{2}-\sqrt{2}} = \frac{2(\sqrt{2}+\sqrt{2})}{0} \rightarrow x = \sqrt{2} + 2\sqrt{2} = 3\sqrt{2}$$

$$\frac{2\sqrt{2}}{\sqrt{2}-\sqrt{2}} = 2\sqrt{2} \times \frac{\sqrt{2}+\sqrt{2}}{\sqrt{2}-\sqrt{2}} = 2\sqrt{2} \times \frac{2}{0} = 4\sqrt{2}$$

$$\frac{x^x + x^{x+1} + x^{x+2} + x^{x+3} + x^{x+4} + x^{x+5}}{x^{x-2} + x^{x-1} + x^x + x^{x+1} + x^{x+2} + x^{x+3}} = \frac{x^x(1+x+x^2+x^3+x^4+x^5)}{x^{x-2}(1+x+x^2+x^3+x^4+x^5)} = 202$$

$$\frac{x^x}{x^{x-2}} \times \frac{202}{9} = 202 \rightarrow \frac{x^x}{x^{x-2}} = 9 \rightarrow x=2$$

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$(a^x + b^x - xab)^x (a^x + b^x + xab)^x = t(x - \sqrt{x})$ $\left((a-b)^x (a+b)^x \right)^x = t(x - \sqrt{x}) \quad \boxed{t=19}$ $\left((\sqrt{x-y} - \sqrt{x+y})^x \right)^x \rightarrow \frac{\sqrt{x-y} + \sqrt{x+y} - 2\sqrt{y}}{(x-y - y)^2} = \frac{14}{(x-y)^2} = 14(x-y)$	$a = \sqrt{x-y} / b = \sqrt{x+y}$ 6
$\left(a + \frac{1}{a} + \sqrt{x} \right)^x \left(a + \frac{1}{a} - \sqrt{x} \right)^x = x^t$ $\left(a + \frac{1}{a} + \sqrt{x} \right)^x \left(a + \frac{1}{a} - \sqrt{x} \right)^x = a^x + \frac{1}{a^x} + x \rightarrow \frac{x - \sqrt{x}}{1} + \frac{1}{x - \sqrt{x}} + x$ $\frac{(x - \sqrt{x})^2}{x - \sqrt{x}} + x = x^t \rightarrow \frac{(x - \sqrt{x})^2}{x - \sqrt{x}} + x = x^t$ $\frac{(x - \sqrt{x})^2}{x - \sqrt{x}} + x = x^t \rightarrow \frac{(x - \sqrt{x})^2}{x - \sqrt{x}} + x = x^t$	$a = \sqrt{x-y}$ 7
$A = \sqrt[10]{x^3 \times x^2} (x)^{-1(-\frac{x}{x})} = (x^{\frac{5}{2}})^{\frac{1}{10}} \times x^{\frac{x}{x}} = x^{\frac{5}{20}} = x^{\frac{1}{4}} = x$ $xA = 1 \rightarrow (xA)^{-\frac{1}{x}} = \sqrt[1]{\frac{1}{x}} = \frac{1}{x} = \frac{1}{x} \cdot 10$	8
$a^{\frac{1}{x}} = x \sqrt{x} \times a^{\frac{10}{x}} \rightarrow a^{\frac{1}{x}} \times x \sqrt{x} = 1 \rightarrow a = \frac{1}{x \sqrt{x}} = \frac{1}{x^{\frac{3}{2}}} = \frac{\sqrt{x}}{x^3}$ $\frac{1}{a} = \left(\frac{1}{\sqrt{x}} - x \right) = \frac{1 - x\sqrt{x}}{\sqrt{x}} = \frac{x(1 - \sqrt{x})}{\sqrt{x}} \times \frac{1}{1 + \sqrt{x}}$ $\frac{x(\sqrt{x}-1)}{1+\sqrt{x}} \times \frac{1-\sqrt{x}}{1-\sqrt{x}} = \frac{x(1-\sqrt{x})}{x} = 1 - \sqrt{x}$	9
$\sqrt{x+a} + \sqrt{x-b} = p$ $\sqrt{x+a} - \sqrt{x-b} = q$ $\sqrt{x+a} = \sqrt{x-b} + q$	10

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

$$(\sqrt{x+a} - \sqrt{x-a}) (\sqrt{x+a} + \sqrt{x-a}) = x+a - x - (-a) = a+a$$

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

۴-ب

$$\sqrt[4]{\sqrt[3]{r^8}} = r^{\frac{8}{12}} = r^{\frac{2}{3}}$$

$$\sqrt[4]{14r} = \sqrt[4]{14} \times \sqrt[4]{r} = 14^{\frac{1}{4}} \times r^{\frac{1}{4}}$$

$$\sqrt[4]{4\sqrt{r}} = (4^{\frac{1}{4}} \times r^{\frac{1}{4}})^{\frac{1}{4}} = r^{\frac{1}{16}}$$

$$\left(r^{\frac{2}{3}} + \frac{1}{2} + \frac{14}{12} \right) \times r = r^{\frac{1+3+14}{12}} \times r = 4 \times r = 12$$