

$$C(11+21+31+\dots+281) \quad C(21+41+61+\dots+241)$$

$$1+4=5 \quad 2+6=8$$

$$5 \times 8 = 40 \rightarrow \boxed{2} \text{ یکان}$$

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$$\sqrt{1+\sqrt{5}} = \sqrt{\frac{1}{4+\sqrt{5}} + \frac{1}{(1+\sqrt{5})^2}} \quad \frac{\sqrt{5}+\sqrt{5}}{\sqrt{10+2}} = \frac{\sqrt{5}+\sqrt{5}}{\sqrt{10+2}}$$

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

$$\left(\frac{\sqrt{5}+\sqrt{5}}{\sqrt{10+2}} \right) (\sqrt{5}-\sqrt{5} - \sqrt{4+\sqrt{5}}) = \frac{2\sqrt{5}}{9} (\sqrt{5}-\sqrt{5} - \sqrt{4+\sqrt{5}}) = \frac{2\sqrt{5}}{9} (-\sqrt{4+\sqrt{5}})$$

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$$\frac{\sqrt{8+\sqrt{17}}}{8-\sqrt{4}} - 2(\sqrt{4}-1)^{-1} = \frac{1}{4} \sqrt{8-\sqrt{17}} - \frac{1}{4} \sqrt{8+\sqrt{17}} = \frac{1}{4} \sqrt{4-2\sqrt{8}} - \frac{1}{4} \sqrt{4+2\sqrt{8}}$$

$$= \frac{1}{4} (\sqrt{8}-\sqrt{4}) - \frac{1}{4} (\sqrt{8}+\sqrt{4}) = \frac{1}{4} (\sqrt{8}-1 - \sqrt{8}-1) = \frac{1}{4} (-2) = -\frac{1}{2}$$

$$= \frac{5\sqrt{8} + \sqrt{48} + 5\sqrt{17} + \sqrt{12}}{19} = \frac{10\sqrt{2} + 4\sqrt{3} + 10\sqrt{17} + 2\sqrt{3}}{19} = \frac{12\sqrt{2} + 6\sqrt{3} + 10\sqrt{17}}{19} = \frac{12(\sqrt{2}+\sqrt{3}) + 10\sqrt{17}}{19}$$

$$\sqrt{9}-1 = \sqrt{3}-1 - 2 \times \frac{1}{\sqrt{3}-1} = \frac{2}{\sqrt{3}-1} \quad \sqrt{5}+\sqrt{5}-\frac{2}{\sqrt{3}-1} = \sqrt{5}+\sqrt{5}(\sqrt{3}+1) = \sqrt{5}+\sqrt{5}\sqrt{3}-1 = \sqrt{5}+\sqrt{15}-1$$

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$$\frac{\sqrt{17}-1}{4+\sqrt{3}} = \frac{4\sqrt{17}-\sqrt{41}-4+\sqrt{3}}{13} = \frac{4\sqrt{17}-9-4+\sqrt{3}}{13} = \frac{4\sqrt{17}-13}{13} = \frac{4\sqrt{17}-13}{13}$$

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

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

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

$$\sqrt[4]{\sqrt{3}} \times \sqrt[4]{\sqrt{5}} \times \sqrt[4]{\sqrt{3}} \rightarrow \sqrt[4]{3} \times \sqrt[4]{5} \rightarrow \sqrt[4]{3} \times \sqrt[4]{5} \times \sqrt[4]{3} = \sqrt[4]{3^2 \times 5} = \sqrt[4]{45}$$

$$\sqrt[4]{192} = \sqrt[4]{2^6 \times 3} = \sqrt[4]{2^4 \times 2^2 \times 3} = \sqrt[4]{2^4} \times \sqrt[4]{2^2 \times 3} = 2 \times \sqrt[4]{12} = 2\sqrt[4]{12}$$

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$$\frac{2^x + 2^{x+1} + 2^{x+2} + 2^{x+3} + 2^{x+4} + 2^{x+5}}{2^{x-2} + 2^{x-1} + 2^x + 2^{x+1} + 2^{x+2} + 2^{x+3}} = \frac{2^x(1+2+2^2+2^3+2^4+2^5)}{2^x(2^{-2}+2^{-1}+1+2+2^2+2^3)} = \frac{2^x(1+2+4+8+16+32)}{2^x(\frac{1}{4}+\frac{1}{2}+1+2+4+8)} = \frac{2^x(63)}{2^x(\frac{15}{4})} = \frac{63 \times 4}{15} = \frac{252}{15} = 16.8$$

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$$\frac{2^x(1+2+2^2+2^3+2^4+2^5)}{2^x(2^{-2}+2^{-1}+1+2+2^2+2^3)} = \frac{2^x \times 63}{2^x \times \frac{15}{4}} = \frac{63 \times 4}{15} = \frac{252}{15} = 16.8$$

$$\Rightarrow \left(\frac{2}{3}\right)^x = \frac{1}{8} \times \frac{63}{15} = \frac{21}{5} = 4.2 \Rightarrow (1/5)^x = 4.2 \Rightarrow x = 2$$

