

اینجا $24! + 23! + 22! + \dots + 2! + 1! + 0!$ را داریم
 * از ۲۴ به بعد همگی به صفر دارند
 * از ۱ به بعد همگی به صفر دارند
 * از ۰ به بعد همگی به صفر دارند

انسانی در یک ثانیه ۲۴ عدد می‌تواند بنویسد
 $24! + 23! + 22! + \dots + 2! + 1! + 0! = 24!$
 $11 + 31 = 1 + 2 = 3$
 رقم یکان ۲۴ → $24 \times 2 = 48$ → در نهایت

الف) $\frac{1}{x+5\sqrt{5}} \times (1+5\sqrt{5})^2 = \frac{1+10\sqrt{5}+25}{x+5\sqrt{5}} = \frac{26+10\sqrt{5}}{x+5\sqrt{5}}$
 ب) $\frac{(5\sqrt{5}+5)(5\sqrt{5}-5)}{(5\sqrt{5}+2)(5\sqrt{5}-2)} = \frac{25-25}{25-4} = \frac{0}{21} = 0$
 ج) $\frac{1}{x+5\sqrt{5}} \times (1+5\sqrt{5})^2 = \frac{26+10\sqrt{5}}{x+5\sqrt{5}} = \frac{26+10\sqrt{5}}{x+5\sqrt{5}}$
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$a = \sqrt[3]{\sqrt[3]{4}-1} \rightarrow a^3 = (\sqrt[3]{\sqrt[3]{4}-1})^3 = \sqrt[3]{4}-1$ $b = \sqrt[3]{\sqrt[3]{4}+1} \rightarrow b^3 = (\sqrt[3]{\sqrt[3]{4}+1})^3 = \sqrt[3]{4}+1$ $(a^3+b^3-2ab)^3 (a^3+b^3+2ab)^3 = (4-4)^3 = 0$ $+ = ? ((a^3+b^3-2ab)(a^3+b^3+2ab))^3$ $(a-b)^3 (a+b)^3 = 0$ $(a^3-b^3)^3 = (a^3+b^3-2ab^2)^3$	$* 2a^2b^2 = 2(ab)^2 = 2(\sqrt[3]{4})^2 = 2\sqrt[3]{16}$ $ab = \sqrt[3]{(\sqrt[3]{4}-1)(\sqrt[3]{4}+1)} = \sqrt[3]{4-1} = \sqrt[3]{3}$ $(ab)^3 = \sqrt[3]{27} = 3$ $2(ab)^3 = 2 \times 3 = 6$ $2a^2b^2 = 2 \times 3 = 6$ $(2\sqrt[3]{4}-2\sqrt[3]{4})^3 = 0$ $\frac{2\sqrt[3]{4}+1-1 \times \sqrt[3]{16}}{2\sqrt[3]{4}} = 1$
$\frac{10x^3 + 10x^2 + 10x + 10}{10x^3 + 10x^2 + 10x + 10} = 1$ $\frac{10x^3(1+1+1+1)}{10x^3(1+1+1+1)} = 1$ $\frac{10x^3}{10x^3} = 1$	$10x^3 + 10x^2 + 10x + 10 = 0$ $10x^3(1+1+1+1) = 0$ $10x^3 \times 4 = 0$ $40x^3 = 0$ $x = 0$
$A = \sqrt[3]{\frac{1}{10}} \left(\frac{1}{10} \right)^{\frac{1}{3}} = \frac{1}{10^{\frac{1}{3}}} = \frac{1}{\sqrt[3]{10}}$ $(1A)^{\frac{1}{3}} = \frac{1}{\sqrt[3]{10}}$ $1 \times \frac{1}{\sqrt[3]{10}} = \frac{1}{\sqrt[3]{10}}$	$\frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \frac{3}{10}$ $\frac{3}{10} = \frac{3}{10}$ $A = \frac{3}{10}$
$a^{\frac{1}{2}} = \sqrt{a}$ $a^{\frac{1}{3}} = \sqrt[3]{a}$ $a^{\frac{1}{4}} = \sqrt[4]{a}$ $a^{\frac{1}{5}} = \sqrt[5]{a}$ $a^{\frac{1}{6}} = \sqrt[6]{a}$	$\frac{1}{a^{\frac{1}{2}}} = \frac{1}{\sqrt{a}}$ $\frac{1}{a^{\frac{1}{3}}} = \frac{1}{\sqrt[3]{a}}$ $\frac{1}{a^{\frac{1}{4}}} = \frac{1}{\sqrt[4]{a}}$ $\frac{1}{a^{\frac{1}{5}}} = \frac{1}{\sqrt[5]{a}}$ $\frac{1}{a^{\frac{1}{6}}} = \frac{1}{\sqrt[6]{a}}$
$\sqrt{x+a} - \sqrt{x-a} = 2$ $\sqrt{x+a} + \sqrt{x-a} - 2 = 0$ $(\sqrt{x+a} - \sqrt{x-a})(\sqrt{x+a} + \sqrt{x-a}) = 0$	$x+a - (x-a) = x+a-x+a = 2a$ $2a = 2 \times 2 = 4$ $a = 2$