

2022 Jan 1

$$1a) \left(\sqrt[4]{a^2 x} + \sqrt[5]{\frac{1}{ax^2}} \right)^{13} \quad \begin{matrix} k_1 + k_2 = 13 \\ x^{k_1 \cdot \frac{1}{4}} + x^{-\frac{2}{5}(13-k_1)} = x^0 \end{matrix}$$

$$5k_1 - 8(13-k_1) = 0 \quad 13k_1 = 8 \cdot 13 \Rightarrow k_1 = 8 \quad k_2 = 5$$

$$\Rightarrow \binom{13}{8} \cdot a^4 \cdot \sqrt[5]{\frac{1}{a^8}} = \binom{13}{8} \cdot a^5 \cdot a^{-3/5}$$

1b) 30 slova azbuke, 4 slova, 5 nishki, 2 ista slova

$$\binom{30}{3} \cdot 3 \cdot \frac{11!}{2!} = 5 \cdot 28 \cdot 28 \cdot 3 \cdot 4 \cdot 3 = \text{Br nishi}$$

(Br nishi) $\Rightarrow$ Rez

1v) 52 karte $\Rightarrow$ 13 po znaku

$$\binom{4}{2} \binom{13}{2} \cdot (3 \cdot 13 + 3 \cdot 11) \cdot 48$$

