Exponenciális egyenletek!

I. a) $4^x = \frac{\sqrt{2}}{8}$

b) $\frac{\sqrt[3]{9}}{27} = 3^x$

c) $\left(\frac{8}{27}\right)^x = \left(\frac{3}{2}\right)^8$

d) $0{,}25^{2-x} = \frac{256}{2^{x-3}}$

II. a) $2^x + 2^{x-3} = 18$

b) $3^x + 3^{x+1} + 3^{x+2} + 3^{x+3} = \frac{40}{3}$

c) $2^{x^2-x-6} = 1$

III. a) $2 \cdot 3^{x+1} = 27 - 9^x$

b) $4^{x+1,5} + 2^{x+2} = 4$

c) $9^{x-1} - 3^{x+1} + 3^{x-3} = 1$

d) $3^{4-x} + 3^{x-1} = 12$

IV. a) $5^{2x-1} + 4^x = 5^{2x} - 4^{x+1}$

b) $2^x + 3^{x-2} = 3^x - 2^{x+1}$

c) $2^{x^2} \cdot 5^{x^2} = 10^{-3}\left(10^{3-x}\right)^2$

V. a) $\left(\frac{5}{7}\right)^{4-2x} \leq 1$

b) $2 \cdot 2^x > \frac{\sqrt{2}}{4}$

c) $\frac{\sqrt{2}}{2} \leq \frac{4}{8^x}$

d) $\left(\frac{3}{5}\right)^{3x-7} \geq \left(\frac{5}{3}\right)^{7x-3}$

VI a) $\left.\begin{array}{l} \text{I. } 2^x + 5 \cdot 7^y = 7 \\ \text{II. } 2^x - 3 \cdot 7^y = -1 \end{array}\right\}$

b) $\left.\begin{array}{l} \text{I. } 3 \cdot 3^x - 2^y = 5 \\ \text{II. } 5 \cdot 3^x + 2 \cdot 2^y = 23 \end{array}\right\}$

c) $\left.\begin{array}{l} \text{I. } xy = 5 \\ \text{II. } 2^x - 4 \cdot 8^y = 0 \end{array}\right\}$

d) $\left.\begin{array}{l} \text{I. } 0{,}2^{\sqrt{2x-y-2,5}} = 1 \\ \text{II. } \frac{x^2}{4} = \frac{9}{2} \end{array}\right\}$