

$$(145)^x = 3451 = \frac{\ln 3451}{\ln 145}$$

$$x = \log_{145} 3451 = \frac{\log 3451}{\log 145}$$

log est le logarithme décimal (\log_{10})

ln est le logarithme naturel (\log_e)

$$e \approx 2,718281\dots$$

$$5^{2x} = 456.35$$

$$2x = \log_5 456.35$$

↓ $\div 2$

$$\Leftrightarrow x = \frac{1}{2} \cdot \log_5 456.35$$

$$1000 \cdot 1,12^x = 10\,000$$

$\div 1000$

$$1,12^x = 10$$

$$x = \log_{1,12} 10 = \frac{\ln 10}{\ln 1,12}$$

$$20 \cdot 5^{3x} = 800$$

$\div 20$

$$5^{3x} = 40$$

$$3x = \log_5 40 \quad \Leftrightarrow \quad x = \frac{1}{3} \cdot \log_5 40$$

$$\frac{e^{x+1}}{100} = 20$$

↓ · 100

$$e^{x+1} = 2000$$

$$x+1 = \ln 2000$$

↓ -1

$$x = \ln 2000 - 1$$

$$20 + 100 \cdot e^{-0,5 \cdot x} = 60$$

$$100 \cdot e^{-0,5 \cdot x} = 40$$

$$e^{-0,5 \cdot x} = 0,4$$

$$-0,5 \cdot x = \ln 0,4$$

$$x = -2 \cdot \ln 0,4 = -\frac{\ln 0,4}{0,5}$$

-20

÷ 100

÷ (-0,5)