$X = \sqrt{\underbrace{5x + 14}_{x = -14/5}} \qquad | \,(\;)^2 \qquad ; \mathbb{D} = x \in \mathbb{R}^{\geq -14/5}$

$x^2 = 5x + 14 \qquad | -5x - 14$

$x^2 - 5x - 14 = 0$ Nullform

$(x - 7)(x + 2) = 0$

$x_1 = 7 \vee x_2 = -2$ Ergebnis

Probe: $x_1 = 7$: $7 = \sqrt{35 + 14} = \sqrt{49} = 7$ ✓

$x_1 = -2$: $-2 = \sqrt{-10 + 14} = \sqrt{4} = 2$ ↯

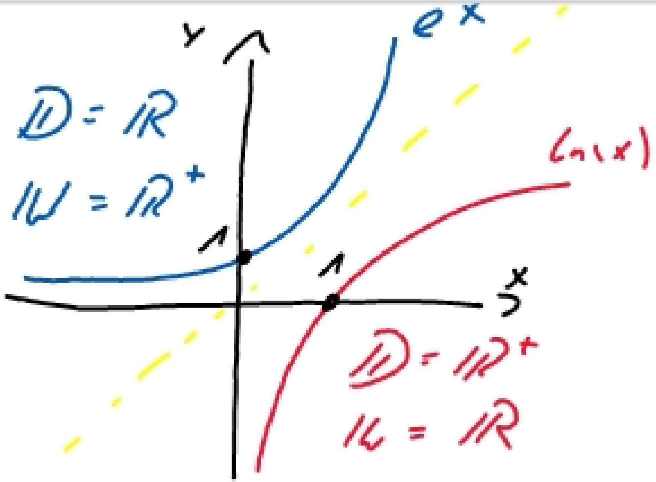
$\mathbb{L} = \{7\}$ Lösung

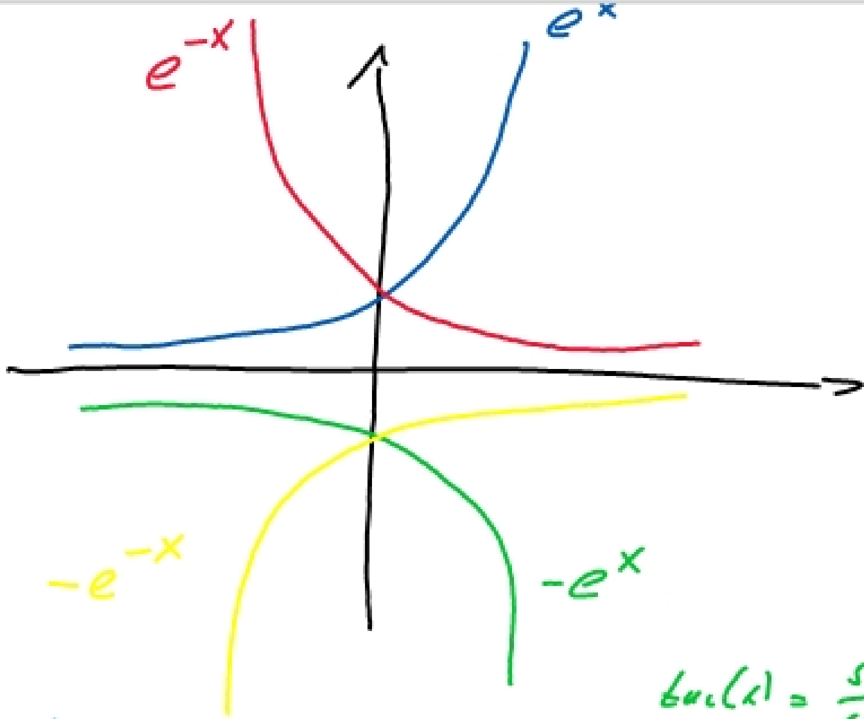
4) $$\frac{2}{3}\cdot\left(\lg 1.000-\frac{1}{2}\right)-\frac{2}{e^{\ln 0{,}5}}+2^{3+\operatorname{ld}3}-\left(10^{2}\right)^{\lg 3}+\ln\left(\frac{1}{\sqrt[3]{e}}\right)^{2}-4\operatorname{ld}\sqrt{2}$$

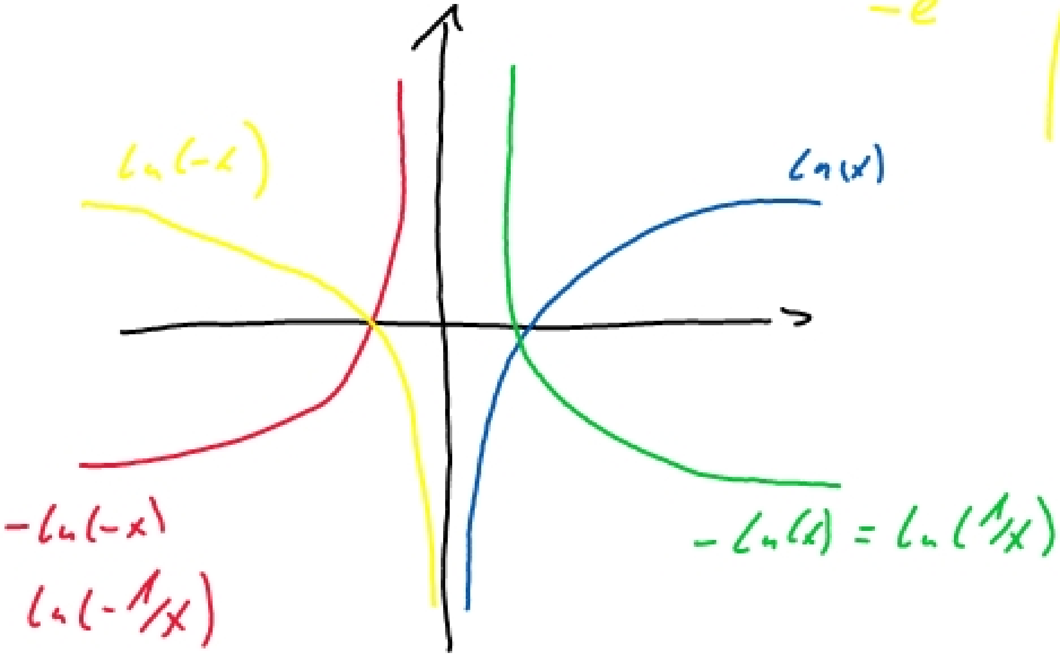
$$\frac{2}{3}\cdot\left(\lg 10^{3}-\frac{1}{2}\right)-\frac{2}{0{,}5}+2^{3}\cdot 2^{\operatorname{ld}3}-10^{2\cdot\lg 3}+\ln e^{-2/3}-4\cdot\operatorname{ld}2^{1/2}$$

$$\frac{2}{3}\cdot\left(3-\frac{1}{2}\right)-4+8\cdot 3-3^{2}-\frac{2}{3}-4\cdot\frac{1}{2}$$

$$\frac{5}{3}-4+24-9-\frac{2}{3}-2=10$$







$$\tan(x) = \frac{\sin(x)}{\cos(x)}$$

$$f(x) = \ln \heartsuit$$

$$f'(x) = 1/\heartsuit \cdot \heartsuit'$$

$$f(x) = \ln(\sin(x))$$

$$f'(x) = \frac{1}{\sin(x)} \cdot \cos(x) = \cot(x)$$

1) $3 \cdot \log x - 4 \log {}^{2}/x - {}^{1}/{}_{3} \log (x^{1})^{6} = {}^{2}/{}_{3} \cdot \log 27 + {}^{1}/{}_{2} \log x^{4} - 2 \cdot \log 6$

$\log x^{3} - \log ({}^{2}/x)^{4} - \log (x^{12})^{1/3} = \log (27)^{2/3} + \log (x^{4})^{1/2} - \log 6^{2}$

$\log \frac{x^{3}}{2^{4}/x^{4} \quad x^{4}} = \log \frac{(\sqrt[3]{27})^{2} \cdot x^{2}}{6^{2}} \quad | \uparrow 10^{x}$

$\frac{x^{3}}{2^{4}} = \frac{3^{2} x^{2}}{6^{2}} \quad | \cdot x^{2} \cdot 2^{4}$

$x = \frac{3^{2} \cdot 2^{4}}{6^{2}} = \frac{(3^{2} \cdot 2^{2}) \cdot 2^{2}}{6^{2}} = \frac{(3 \cdot 2)^{2} \cdot 2^{2}}{6^{2}} = 4$