

N. 225 P. 74

n° 230

$$\log_{10} x = 3,5$$

$$\log_x \frac{1}{100} = 2$$

$$x = 10^{3,5}$$

$$x^2 = \frac{1}{100} \quad x = \pm \frac{1}{10}$$

$$x = 10^{\frac{3,57}{10^2}}$$

n° 243

$$x = \sqrt{10^7}$$

$$\log_a \frac{x^3 y^2}{\sqrt{t} \sqrt[4]{z}} = \log_a x^3 y^2 - \log_a \sqrt{t} \sqrt[4]{z} =$$

$$x = \sqrt{10^6 \cdot 10}$$

$$= \log_a x^3 + \log_a y^2 - \frac{1}{2} \log_a t \sqrt[4]{z} =$$

$$x = 10^3 \sqrt{10}$$

$$= 3 \log_a x + 2 \log_a y - \frac{1}{2} [\log_a t + \log_a \sqrt[4]{z}] =$$

$$3 \log_a x + 2 \log_a y - \frac{1}{2} \log_a t - \frac{1}{4} \log_a z$$

$$\log_e(b \cdot c) = \log_e b + \log_e c$$

$$x^1 = \log_a b$$

$$x^2 = \log_a c$$

$$a^{x_1} = b$$

$$a^{x_2} = c$$

$$b \cdot c = a^{x_1} \cdot a^{x_2}$$

$$b \cdot c = a^{x_1 + x_2}$$

$$x_1 + x_2 = \log_e b \cdot c$$

$$\log_e b + \log_e c = \log_e (b \cdot c)$$

$$\log_a b = \frac{\log_c b}{\log_c a}$$

$$c^{1/x} = b$$

$$x y = \log_c b$$

$$\log_a b \cdot \log_c a$$

$$x = \log_a b \quad y = \log_c a$$

$$a^x = b \quad c^y = a$$

$$\log_{\frac{1}{2}}(e^{2x} - 4e^x + 2) - \log_{\frac{1}{2}}(1 - e^x) \geq -1$$

$$\begin{cases} 1 - e^x > 0 \\ e^{2x} - 4e^x + 2 > 0 \end{cases}$$

$$x < 2 - \sqrt{2}$$

$$\begin{cases} -e^x > -1 - e^x < 1 \end{cases}$$

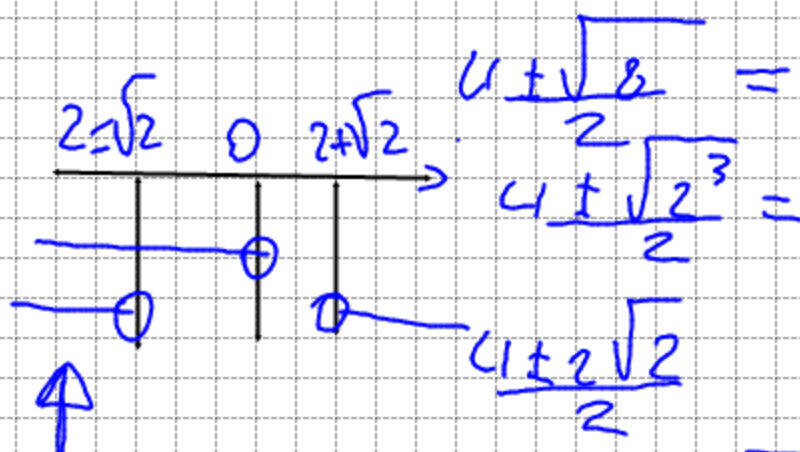
$$\log_{\frac{1}{2}} \frac{e^{2x} - 4e^x + 2}{1 - e^x} \geq -1$$

$$e_{1,2} = \frac{-4 \pm \sqrt{16 - 8}}{2} =$$

$$x < 2 - \sqrt{2}$$

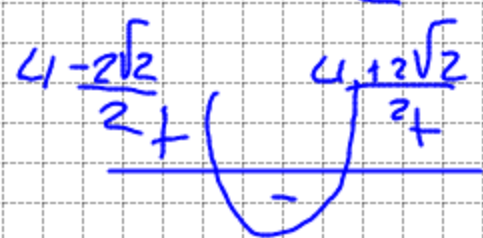
$$\frac{e^{2x} - 4e^x + 2}{1 - e^x} \leq 2$$

$$x < 2 - \sqrt{2}$$



$$e_1 = \frac{4 + 2\sqrt{2}}{2}$$

$$e_2 = \frac{4 - 2\sqrt{2}}{2}$$



$$\frac{e^{2x} - 4e^x + 2}{1 - e^x} \leq \frac{2(1 - e^x)}{1 - e^x}$$

$$x < 2 - \sqrt{2}$$

$$\frac{e^{2x} - 4e^x + 2}{1 - e^x} \leq \frac{2 - 2e^x}{1 - e^x}$$

$$x < 2 - \sqrt{2}$$

$$\frac{e^{2x} - 2e^x}{1 - e^x} \leq 0$$

$$x < 2 - \sqrt{2}$$

$$\frac{e^x(e^x - 2)}{1 - e^x} \leq 0$$

$$x < 2 - \sqrt{2}$$

$$N \rightarrow e^x \geq 0$$

Sempre

$$e^x \geq 2$$

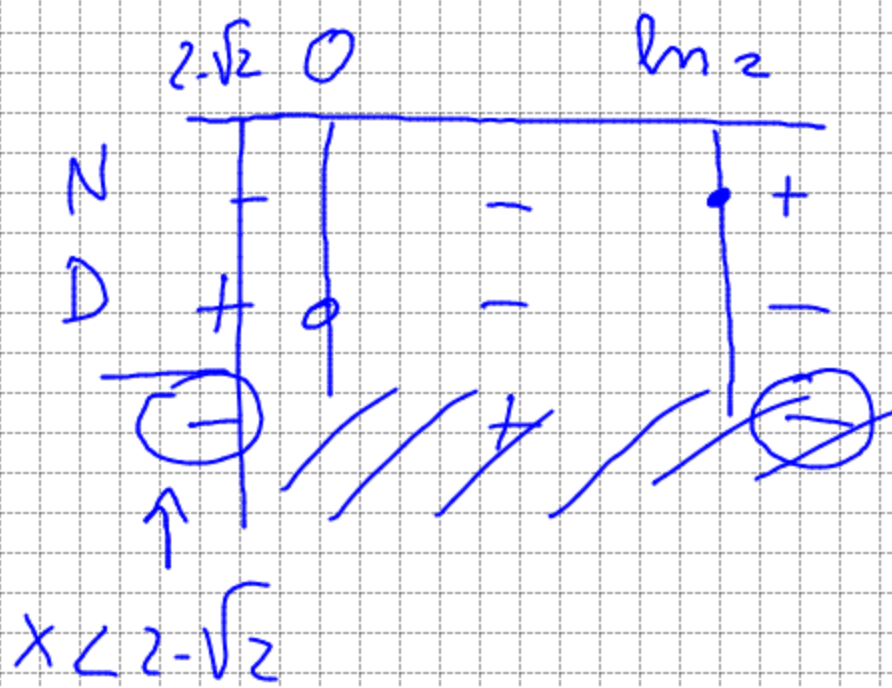
$$x \geq \ln 2$$

$$D \rightarrow 1 - e^x > 0$$

$$-e^x > -1$$

$$e^x < 1$$

$$x < 0$$



$$f(x) = \frac{1}{\ln(3x-1)}$$

$$P.E. = \left\{ x \in \mathbb{R} \mid \begin{cases} 3x-1 > 0 \\ \ln(3x-1) \neq 0 \end{cases} \right\}$$

$$= \left(\frac{1}{3}; \frac{2}{3} \right) \cup \left(\frac{2}{3}; +\infty \right)$$

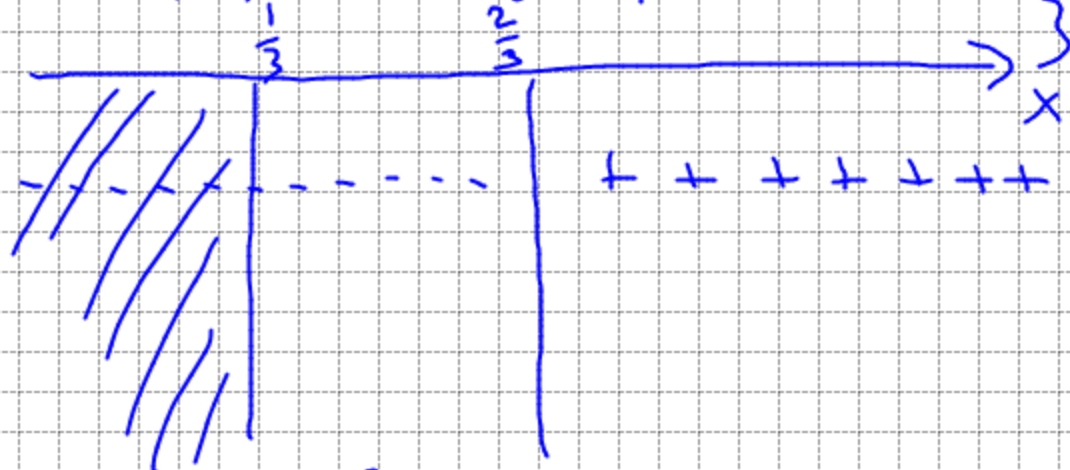
$$f(x) > 0$$

$$N > 0 \quad 1 > 0 \text{ sempre}$$

$$D > 0 \quad \ln(3x-1) > 0$$

$$3x-1 > 1 \quad x > \frac{2}{3}$$

$f(x)$



$$f(x) > 0 \quad x > \frac{2}{3}$$

$$f(x) < 0 \quad x \in \left(\frac{1}{3}; \frac{2}{3} \right)$$

$$\log_{10} x = -0,3$$

$$x = 10^{-\frac{3}{10}}$$

$$x = \left(\frac{1}{10} \right)^{\frac{3}{10}} \Rightarrow$$

$$\sqrt[10]{\frac{1}{10^3}}$$

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