ES 166 PAG 71

$$\frac{e^{\sqrt{1-x}} - e^{2-2x}}{(0,1)^{x^2-3} - 10^{2x}} \leq 0$$

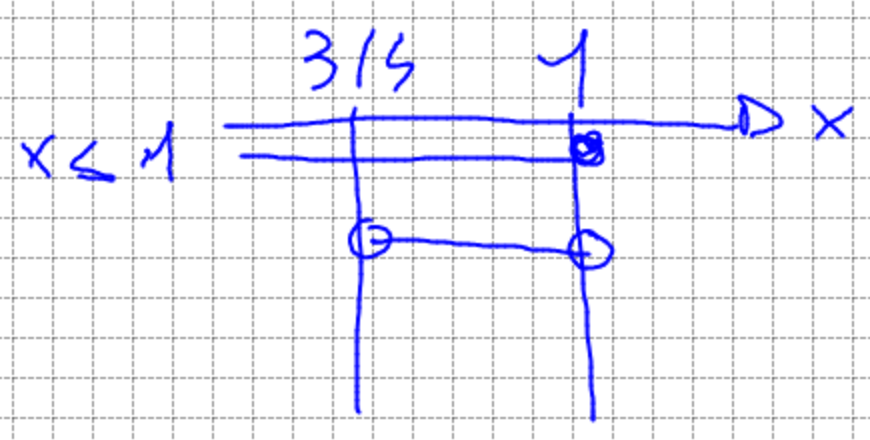
$N \geq 0 \longrightarrow e^{\sqrt{1-x}} - e^{2-2x} \geq 0$

$e^{\sqrt{1-x}} \geq e^{2-2x} \longrightarrow \sqrt{1-x} \geq 2-2x$

$$1)\begin{cases} 2-2x \geq 0 \\ 1-x \geq (2-2x)^2 \end{cases} \cup \; 2)\begin{cases} 2-2x < 0 \\ 1-x \geq 0 \end{cases}$$

$$1)\begin{cases} 2-2x \geq 0 \\ 1-x \geq 4+4x^2-8x \end{cases}$$

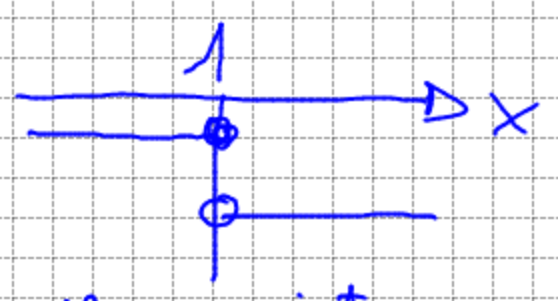
$$\begin{cases} x \leq 1 \\ 4x^2-7x+3 \leq 0 \end{cases} \longrightarrow x_{12} = \frac{7 \pm \sqrt{49-48}}{8} = \frac{7 \pm 1}{8} \longrightarrow x_1 = 1, \; x_2 = \frac{3}{4}$$



$S_1: \left(\frac{3}{4}; 1\right)$

$$2)\begin{cases} 1-x \geq 0 \longrightarrow x \leq 1 \\ 2-2x < 0 \longrightarrow x > 1 \end{cases}$$

$N: \left(\frac{3}{4}; 1\right)$



Non esiste

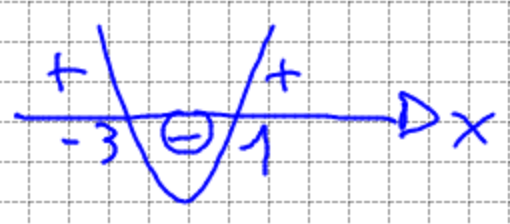
$D > 0 \longrightarrow (0,1)^{x^2-3} - 10^{2x} > 0 \quad (\bullet)$

$\left(\frac{1}{10}\right)^{x^2-3} - \left(\frac{1}{10}\right)^{-2x} > 0$

$x^2-3 < -2x \longrightarrow x^2+2x-3 < 0$

$x_{1,2} = -1 \pm \sqrt{1+3} = -1 \pm 2 \longrightarrow x_1 = -3, \; x_2 = 1$

$S_2:$



		-3		3/4		1	
S_1	−		−	0	+	0	−
S_2	−	0	+		+	0	−
S_F	+		−		+		+

$S_F: \left(-3; \frac{3}{4}\right)$

$(0,1)^{x^2-3} - 10^{2x} > 0$

$(10)^{3-x^2} - 10^{2x} > 0 \qquad 3-x^2 > 2x$

$-x^2-2x+3 > 0$

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