

ES N 312 PAG 596

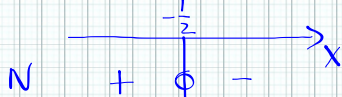
$$\frac{3 \cdot 3^{2x} - 4 \cdot 4^{2x}}{|-1 + 5^{x+1}| - 4} < 0$$

N) $3 \cdot 3^{2x} - 4 \cdot 4^{2x} > 0$
 $3^{2x+1} > 4^{2x+1}$

$$\left(\frac{3}{4}\right)^{2x+1} > 1$$

$$\left(\frac{3}{4}\right)^{2x+1} > \left(\frac{3}{4}\right)^0$$

$$2x+1 < 0 \quad x < -\frac{1}{2}$$



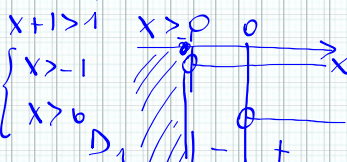
g) $| -1 + 5^{x+1} | - 4 > 0$

Studio il segno del modulo:

se $-1 + 5^{x+1} > 0 \quad 5^{x+1} > 1 \quad 5^{x+1} > 5^0$

$$x+1 > 0 \quad \boxed{x > -1}$$

$$-1 + 5^{x+1} - 4 > 0 \quad 5^{x+1} > 5$$

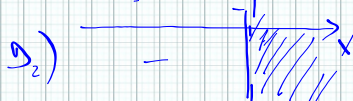


se $-1 + 5^{x+1} < 0 \quad 5^{x+1} < 1 \quad 5^{x+1} < 5^0$

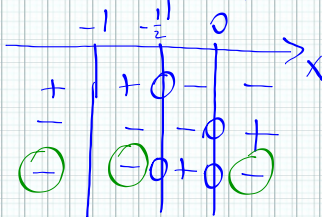
$$x+1 < 0 \quad \boxed{x < -1}$$

$$1 - 5^{x+1} - 4 > 0 \quad -5^{x+1} > 3$$

$$5^{x+1} < -3 \quad \text{mai!}$$



JRUZ



N 286 PAG 596

$$7^x - 6 > 7^{1-x} \rightarrow 7^1 \cdot 7^{-x} = \frac{7^1}{7^x}$$

$$7^x - \frac{7}{7^x} - 6 > 0 \quad \text{pongo } 7^x = t$$

$$t - \frac{7}{t} - 6 > 0 \quad \frac{t^2 - 6t - 7}{t} > 0$$

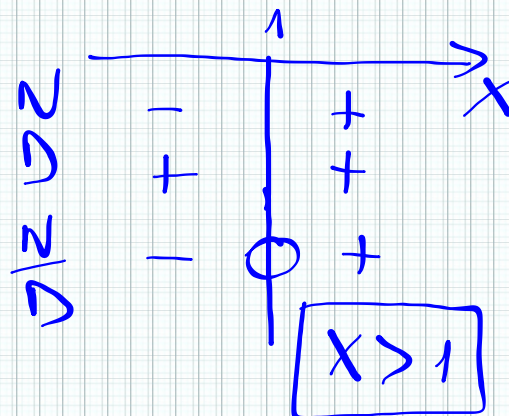
$$N) \quad t^2 - 6t - 7 > 0 \quad t_{1,2} = 3 \pm \sqrt{9+7} = 3 \pm 4 = \begin{matrix} -1 \\ 7 \end{matrix}$$

$$t < -1 \cup t > 7$$

~~$$7^x < -1 \cup 7^x > 7$$~~

$$\text{mai} \quad \cup \quad x > 1 \quad \left. \vphantom{\text{mai}} \right\} x > 1 \quad (N)$$

$$g) \quad t > 0 \quad 7^x > 0 \quad \text{sempre}$$



N 292 PAG 596 $\frac{1}{x} = t \quad 5^t = 2$

$5^{\frac{2}{x}} - \frac{26}{25} \cdot 5^{\frac{1}{x}} > -\frac{1}{25}$ C.E. = $\{x \in \mathbb{R} / x \neq 0\}$

$t^2 - \frac{26}{25}t + \frac{1}{25} > 0$ $5^{\frac{1}{x}} = t$

$25t^2 - 26t + 1 > 0$

$t_{1,2} = \frac{13 \pm \sqrt{169 - 25}}{25} = \frac{13 \pm 12}{25}$

$= \begin{cases} \frac{1}{25} & t_1 = \frac{1}{25} \\ 1 & t_2 = 1 \end{cases}$

$t < \frac{1}{25} \cup t > 1$ $\frac{1}{25} = \left(\frac{1}{5}\right)^2 = \left(\frac{1}{5}\right)^2 = 5^{-2}$

$5^{\frac{1}{x}} < 5^{-2} \cup 5^{\frac{1}{x}} > 5^0$

$\frac{1}{x} < -2 \cup \frac{1}{x} > 0$

$\frac{1}{x} + 2 < 0 \cup x > 0$

$\frac{1+2x}{x} < 0 \cup x > 0$

$\frac{1+2x}{x} < 0 \cup x > 0$

 $x > -\frac{1}{2} \cup x > 0$
 $\frac{1}{2} < x < 0 \cup x > 0$

N 290

$(0,01)^x - 7 \left(\frac{1}{10}\right)^x - 30 \geq 0$

$\left(\frac{1}{100}\right)^x - 7 \left(\frac{1}{10}\right)^x - 30 \geq 0$

$\left[\left(\frac{1}{10}\right)^2\right]^x - 7 \left(\frac{1}{10}\right)^x - 30 \geq 0$

$\left(\frac{1}{10}\right)^{2x} - 7 \left(\frac{1}{10}\right)^x - 30 \geq 0$

pongo $\left(\frac{1}{10}\right)^x = t$

$t^2 - 7t - 30 \geq 0$

N 244 PAG 593

$25 \cdot \left(\frac{2}{5}\right)^{-x} - 10 \left[\left(\frac{5}{2}\right)^{2x} - 1\right] - 4 \left(\frac{5}{2}\right)^x$

$25 \left(\frac{5}{2}\right)^x - 10 \left[\left(\frac{5}{2}\right)^{2x} - 1\right] = 4 \left(\frac{5}{2}\right)^x$

$\left(\frac{5}{2}\right)^x = 5 \quad 25 \cdot 5 - 10 \left[5^2 - 1\right] = 4 \cdot 5$

$25 \cdot 5 - 10 \cdot 5^2 + 10 - 4 \cdot 5 = 0$

$10 \cdot 5^2 - 21 \cdot 5 - 10 = 0$

$5_{1,2} = \frac{21 \pm \sqrt{441 + 400}}{20}$

$= \frac{21 + 29}{20} < \frac{8}{20} = \frac{2}{5}$

$\left(\frac{5}{2}\right)^x = \frac{2}{5}$ mai!

$\left(\frac{5}{2}\right)^x = \frac{5}{2} \quad \boxed{x=1}$

