

DOMINIO DELLA FUNZIONE

①

$$y = \sqrt{\log_3(3x-1) + \log_3(2x + \frac{7}{4})}$$

$$\textcircled{1} \begin{cases} 3x-1 > 0 \\ 2x + \frac{7}{4} > 0 \end{cases}$$

$$\textcircled{1} \begin{cases} x > \frac{1}{3} \\ x > -\frac{7}{8} \end{cases}$$

$$\textcircled{3} \log_3(3x-1) + \log_3(2x + \frac{7}{4}) \geq 0$$

$$\textcircled{3} \begin{cases} x \leq -1 \vee x \geq \frac{11}{24} \end{cases}$$

$$\textcircled{3} \log_3(3x-1) + \log_3(2x + \frac{7}{4}) \geq 0 \rightarrow \log_a m + \log_a n = \log_a m \cdot n$$

$$\log_3(3x-1)(2x + \frac{7}{4}) \geq \log_3 1$$

$\Downarrow$

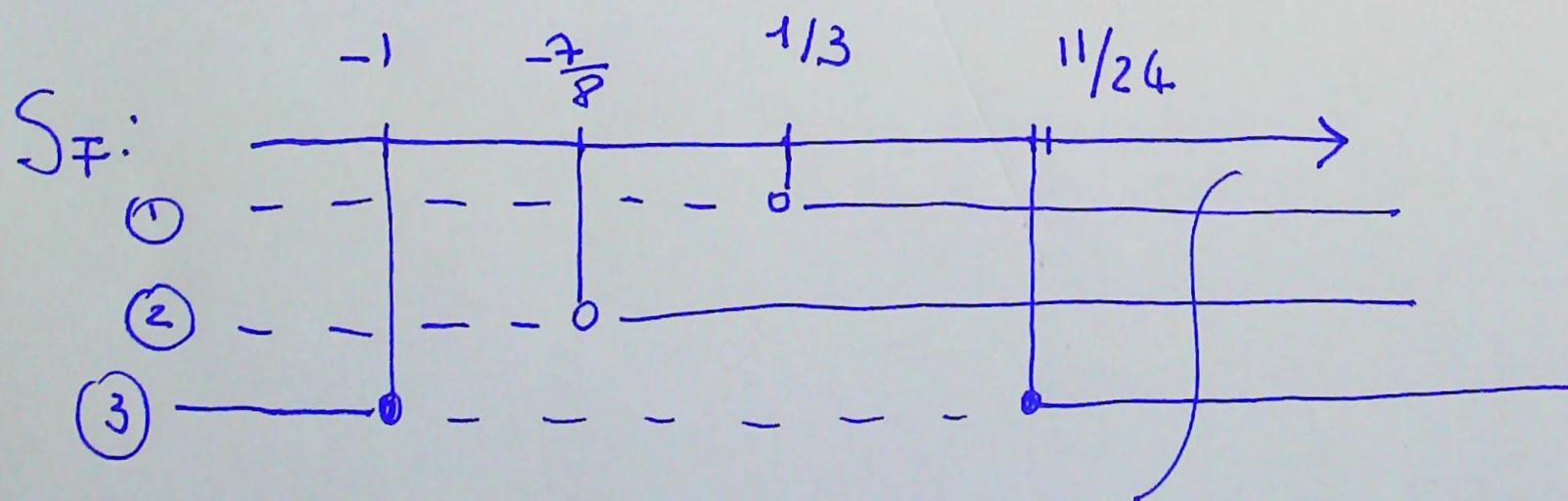
$$(3x-1)(2x + \frac{7}{4}) \geq 1 \quad 6x^2 + \frac{21}{4}x - 2x - \frac{7}{4} - 1 \geq 0$$

$$24x^2 + 21x - 8x - 7 - 4 \geq 0 \quad 24x^2 + 13x - 11 \geq 0$$

$$24x^2 + 13x - 11 = 0 \quad x_{1,2} = \frac{-13 \pm \sqrt{169 + 1056}}{48} = \frac{-13 \pm 35}{48} = \begin{matrix} \frac{11}{24} \\ -1 \end{matrix}$$

$$\begin{matrix} + & & + \\ -1 & & \frac{11}{24} \end{matrix}$$

$$x \leq -1 \vee x \geq \frac{11}{24}$$



$$S_F: x > \frac{11}{24} \rightarrow [\frac{11}{24}, +\infty)$$