

# DISINQUAZIONE IN VALORE ASSOLUTO

$$|x| + |x-1| < 2$$

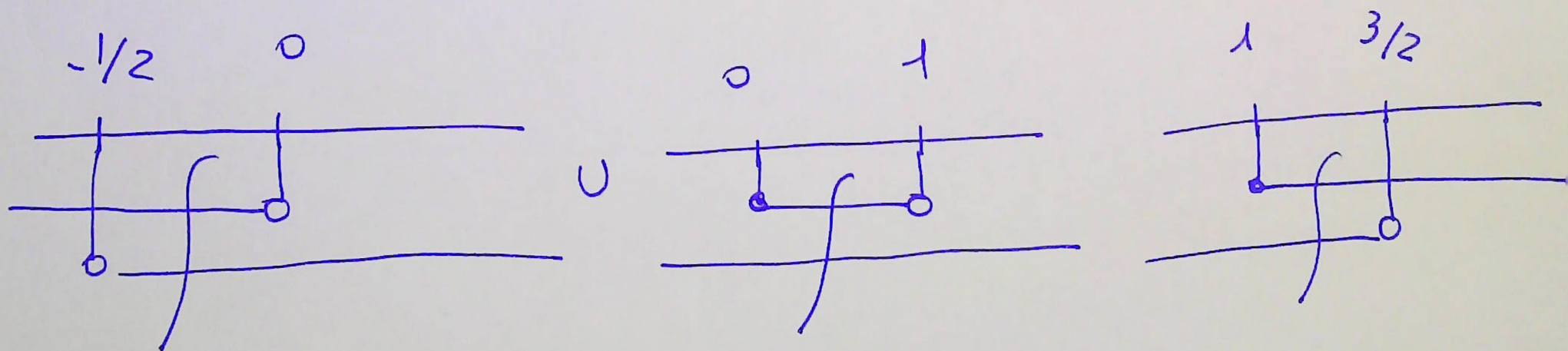
$$|x| = \begin{cases} x & x \geq 0 \\ -x & x < 0 \end{cases}$$

$$|x-1| = \begin{cases} x-1 & x \geq 1 \\ 1-x & x < 1 \end{cases}$$

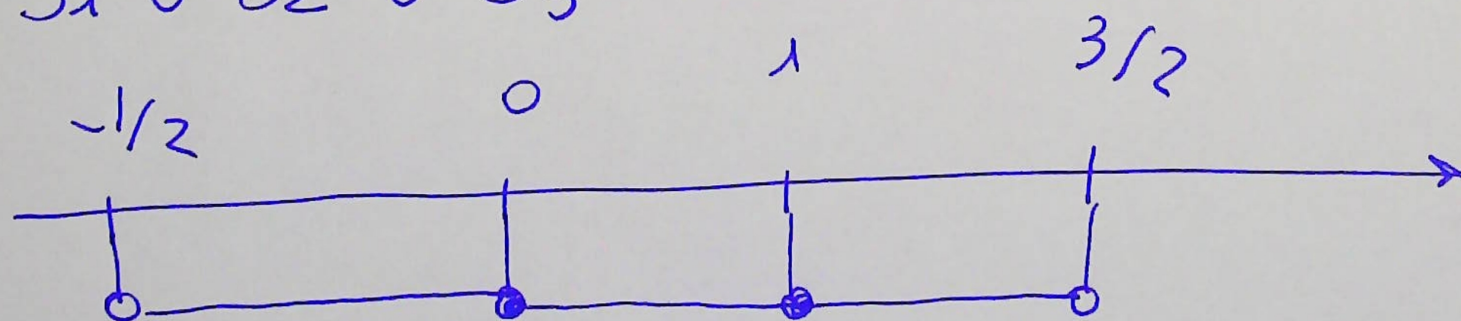
|         |       |       |
|---------|-------|-------|
|         | 0     | 1     |
| $ x $   | $-x$  | $x$   |
| $ x-1 $ | $1-x$ | $x-1$ |

$$S_1: \begin{cases} x < 0 \\ -x + (1-x) < 2 \end{cases} \cup S_2: \begin{cases} 0 \leq x < 1 \\ x + (1-x) < 2 \end{cases} \cup S_3: \begin{cases} x \geq 1 \\ x + (x-1) < 2 \end{cases}$$

$$S_1: \begin{cases} x < 0 \\ -2x < 1 \\ x > -1/2 \end{cases} \cup S_2: \begin{cases} 0 \leq x < 1 \\ 1 < 2 \quad \forall x \end{cases} \cup S_3: \begin{cases} x \geq 1 \\ 2x < 3 \\ x < 3/2 \end{cases}$$



$$S_F: S_1 \cup S_2 \cup S_3$$



$$S_F: -\frac{1}{2} < x < \frac{3}{2}$$