

$$|a| = \begin{cases} a & \text{se } a > 0 \\ -a & \text{se } a < 0 \end{cases}$$

$$|3| = 3 \quad |-3| = 3$$

PROPRIETÀ

- $|a| = |-a| \quad \forall a$
- $|a \cdot b| = |a| |b| \quad \forall a, b$
- $\left| \frac{a}{b} \right| = \frac{|a|}{|b|} \quad \forall a, b, \text{ con } b \neq 0.$
- $|a| = |b| \Leftrightarrow a = \pm b$
- $|a| \leq |b| \Leftrightarrow a^2 \leq b^2$
- $\sqrt{a^2} = |a|$

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$$|x-3| - 4x = |x+1| - 3$$

			-1	3	
			-	-	+
$ x-3 $	$x-3 \geq 0$	$x \geq 3$	-	+	+
$ x+1 $	$x+1 \geq 0$	$x \geq -1$	-	+	+

$$\left\{ \begin{array}{l} x < -1 \\ -x+3-4x = -x-1-3 \end{array} \right. \cup \left\{ \begin{array}{l} -1 \leq x < 3 \\ -x+3-4x = x+1-3 \end{array} \right. \cup \left\{ \begin{array}{l} x \geq 3 \\ x-3-4x = x+1-3 \end{array} \right.$$

$$\begin{cases} x < -1 \\ -x+3-4x = -x-1-3 \end{cases} \cup \begin{cases} -1 \leq x < 3 \\ -x+3-4x = x+1-3 \end{cases}$$

$$\cup \begin{cases} x \geq 3 \\ x-3-4x = x+1-3 \end{cases}$$

$$\begin{cases} x < -1 \\ x = \frac{7}{4} \end{cases} \cup \begin{cases} -1 \leq x < 3 \\ x = \frac{5}{6} \end{cases} \cup \begin{cases} x \geq 3 \\ x = -\frac{1}{4} \end{cases}$$

$$x = \frac{5}{6}$$