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$P(x) = ax^n + \dots + bx - 5$

$P(3) = 7$

$(0,3) \Rightarrow P(x) = -2$

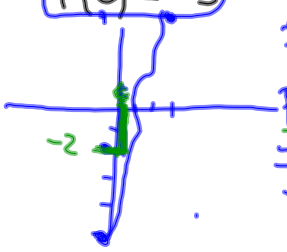
$P(0) = -5$

IVT Bolzano

P cont en $[0,3]$

$P(0) < -2 < P(3)$

$\Rightarrow \exists c \in (0,3) \; P(c) = -2$



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$y = \operatorname{tg} x$

$f(\pi/4) = 1 > 0$

$f(3\pi/4) = -1 < 0$

$f(c) \neq 0$ en $[\pi/4, 3\pi/4]$

f cont $[a,b]$ y $\operatorname{sig} f(a) \neq \operatorname{sig} f(b)$ $\Rightarrow \exists c \in (a,b) \; f(c) = 0$

SI

NO

¿NO?

NO CONTRADICE BOLZANO, pues la func no es cont en $[\pi/2, 3\pi/2]$

$y = \operatorname{tg} x = \frac{\operatorname{sen} x}{\cos x}$ $D = \{x / \cos x \neq 0\}$

$D = \mathbb{R} - \{\pi/2 + \pi k\}$

f cont $[\pi/4, 3\pi/4] - \{\pi/2\}$

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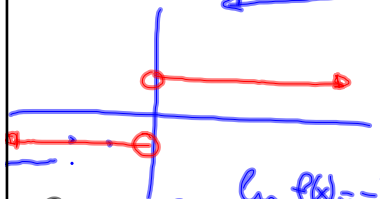
$f(x) = \frac{x}{|x|}$

Dominio $D = \mathbb{R} - \{0\}$

Gráfica

x	$-\infty$	-2	-1	0^-	0^+	1	2	$+\infty$
y	-1	-1	-1	-1	1	1	1	1



$f(0)$ — $\lim_{x \to 0} f(x)$ $\begin{cases} \lim_{x \to 0^-} f(x) = -1 \\ \lim_{x \to 0^+} f(x) = 1 \end{cases}$ $\nexists \lim_{x \to 0} f(x)$

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