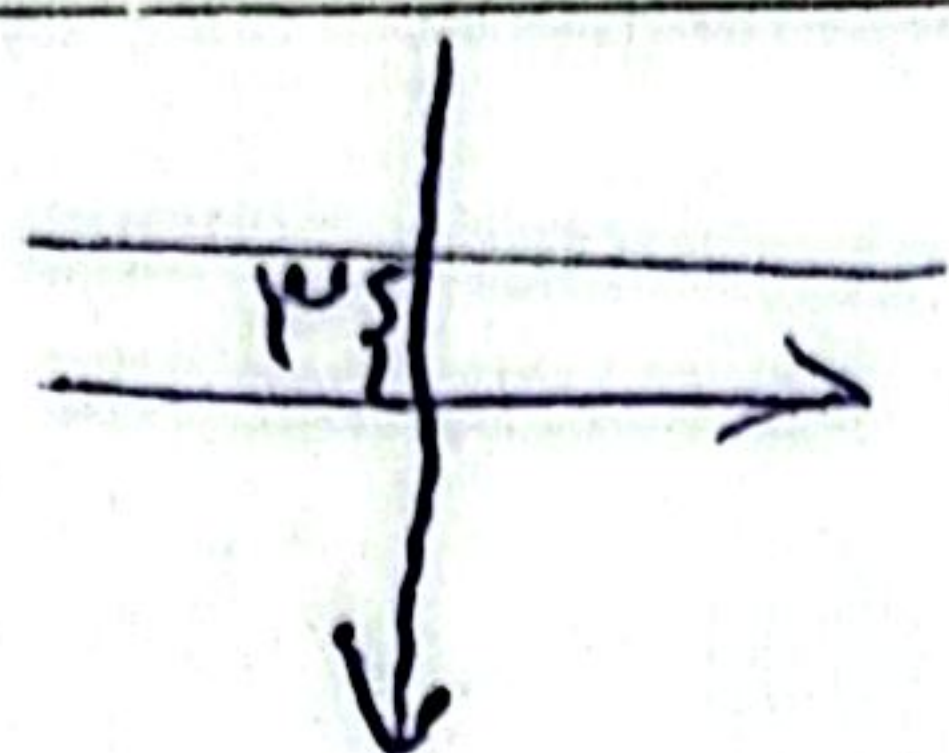


الف) $y^3 - x = 2x^2 \Rightarrow y^3 = 2x^2 + x \Rightarrow y = \sqrt[3]{2x^2 + x}$ تابع ✓

ب) $|y| + x^2 = x + 3 \Rightarrow |y| = -x^2 + x + 3 \Rightarrow y = \begin{cases} -x^2 + x + 3 \\ x^2 - x - 3 \end{cases}$ تابع ✗

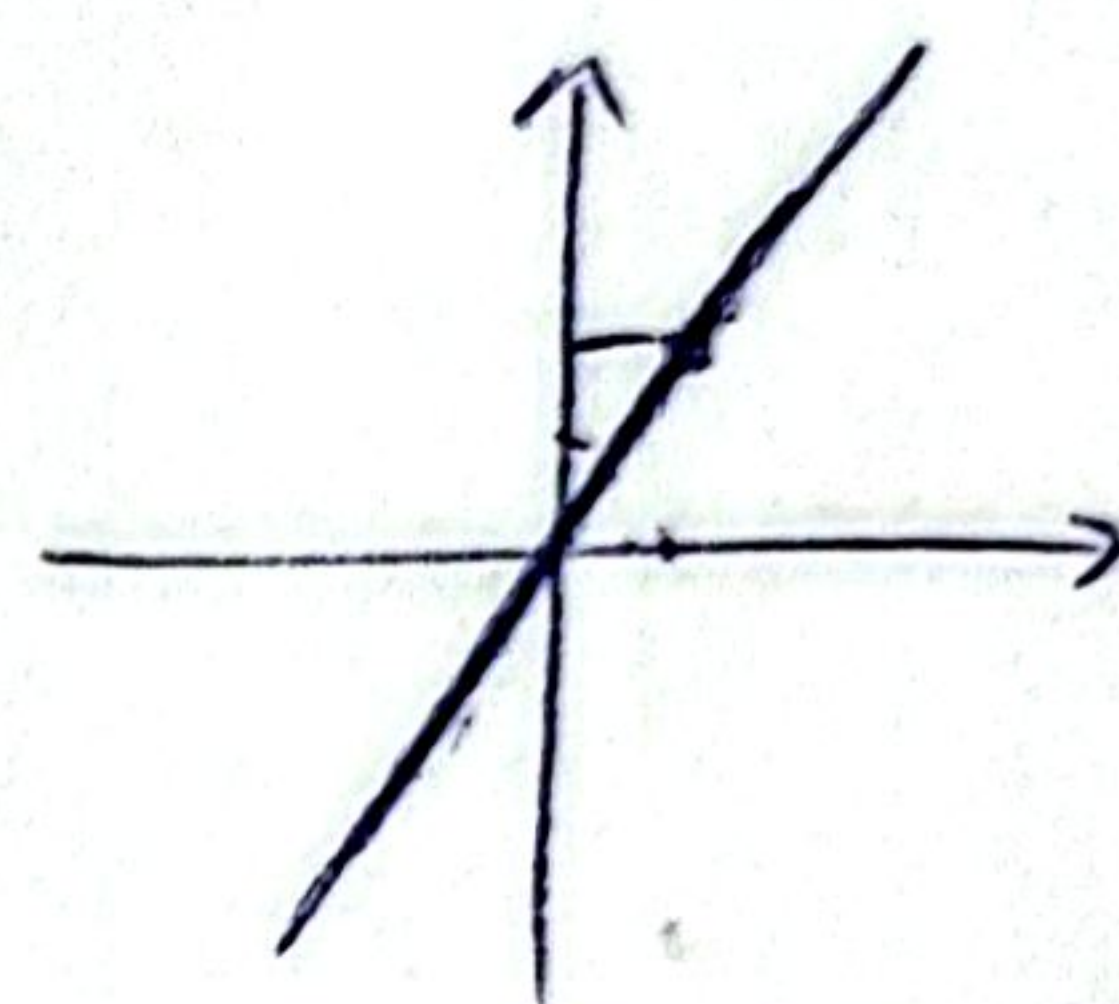
ج) $\sqrt{x-2} + |y-2| = 0 \Rightarrow x=2, y=2 \rightarrow (2,2)$ تابع ✓

د) $x = \cos y, x=0 \Rightarrow y = \left\{ \frac{\pi}{2}, \frac{3\pi}{2}, \dots \right\}$ تابع ✗



الف) ضابطه $y=3$

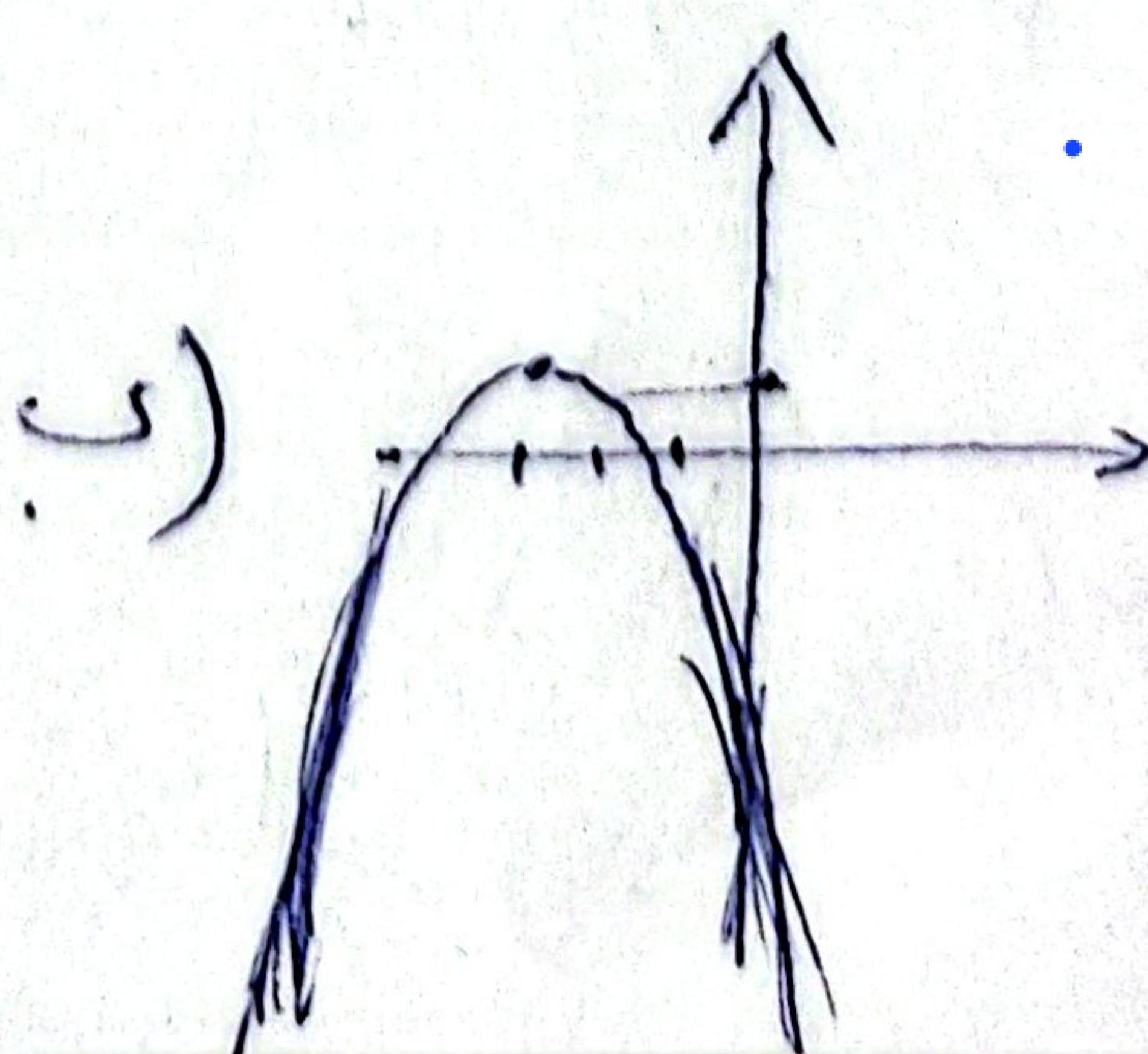
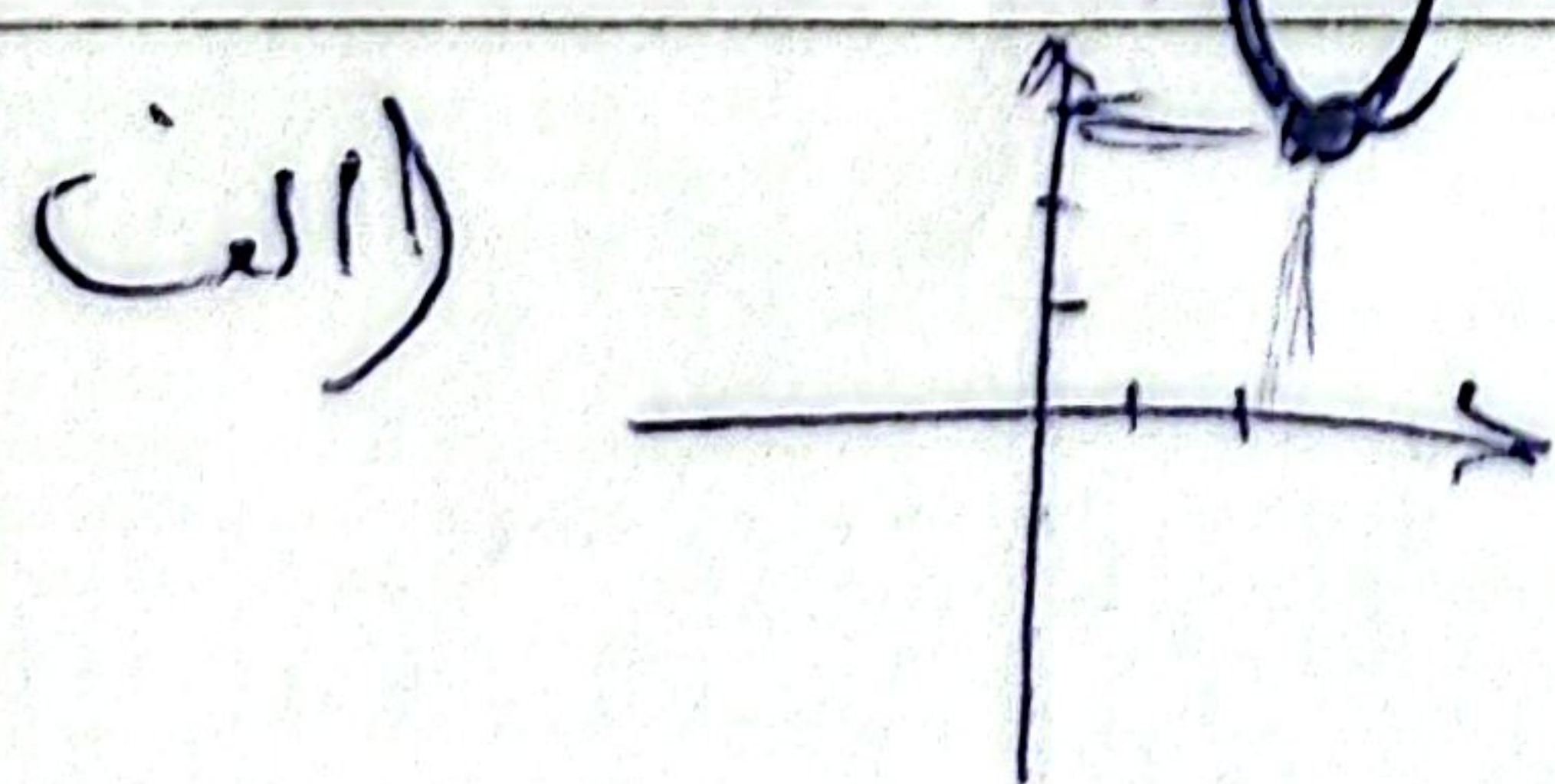
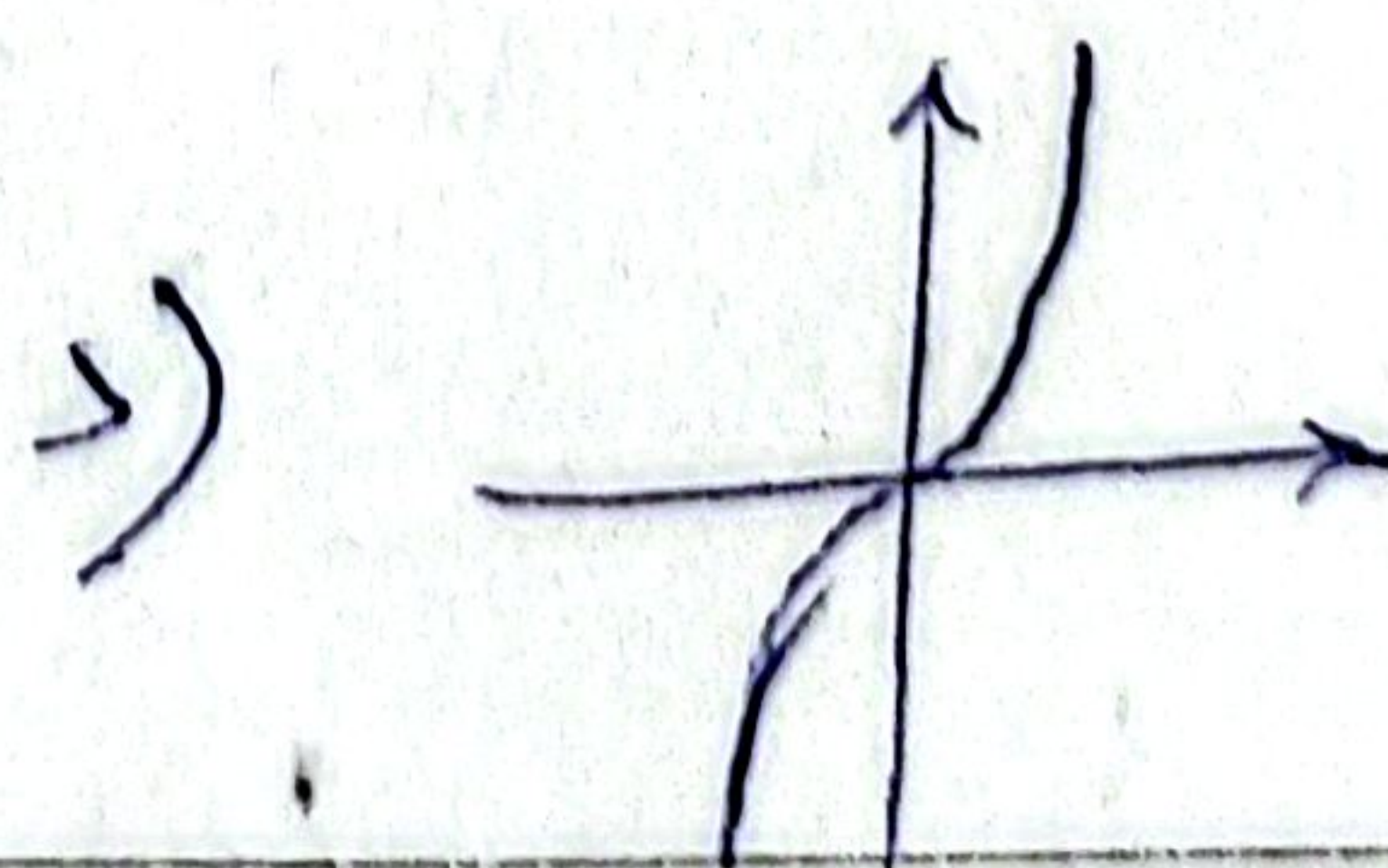
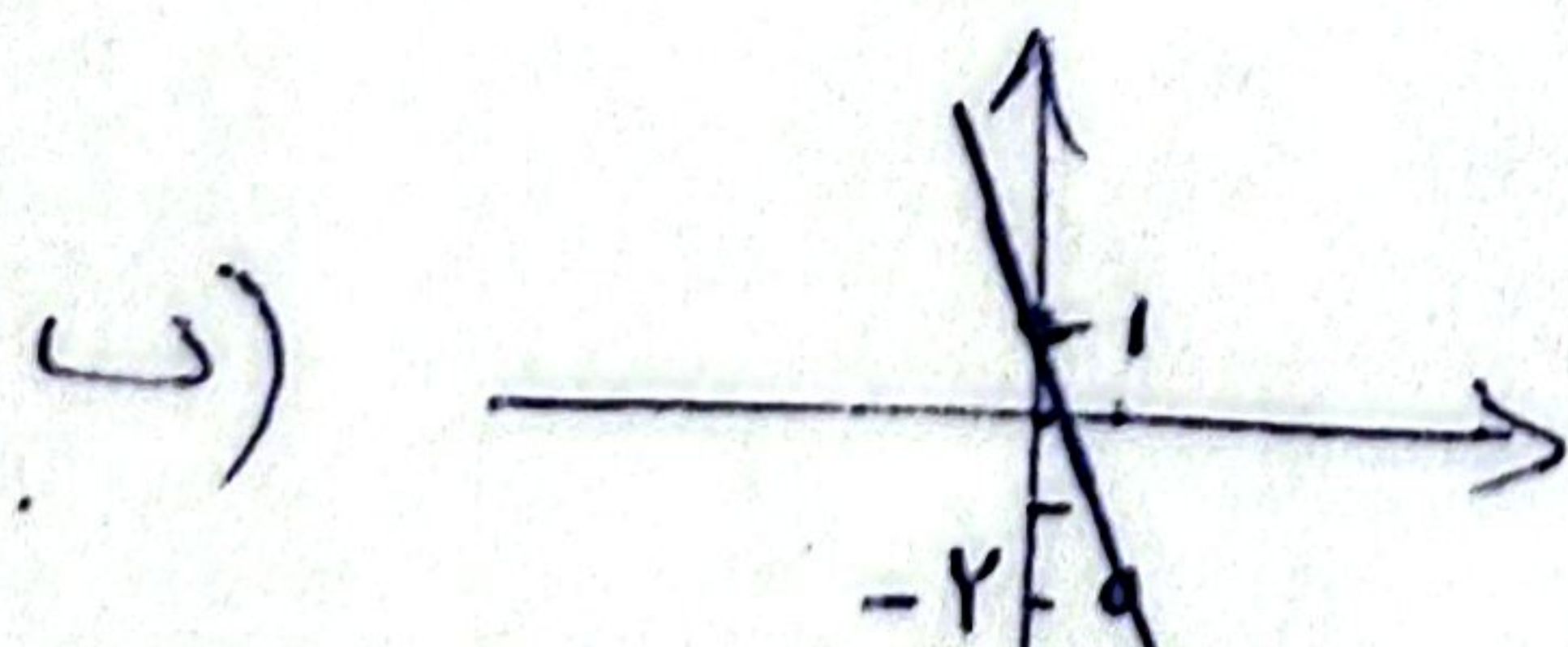
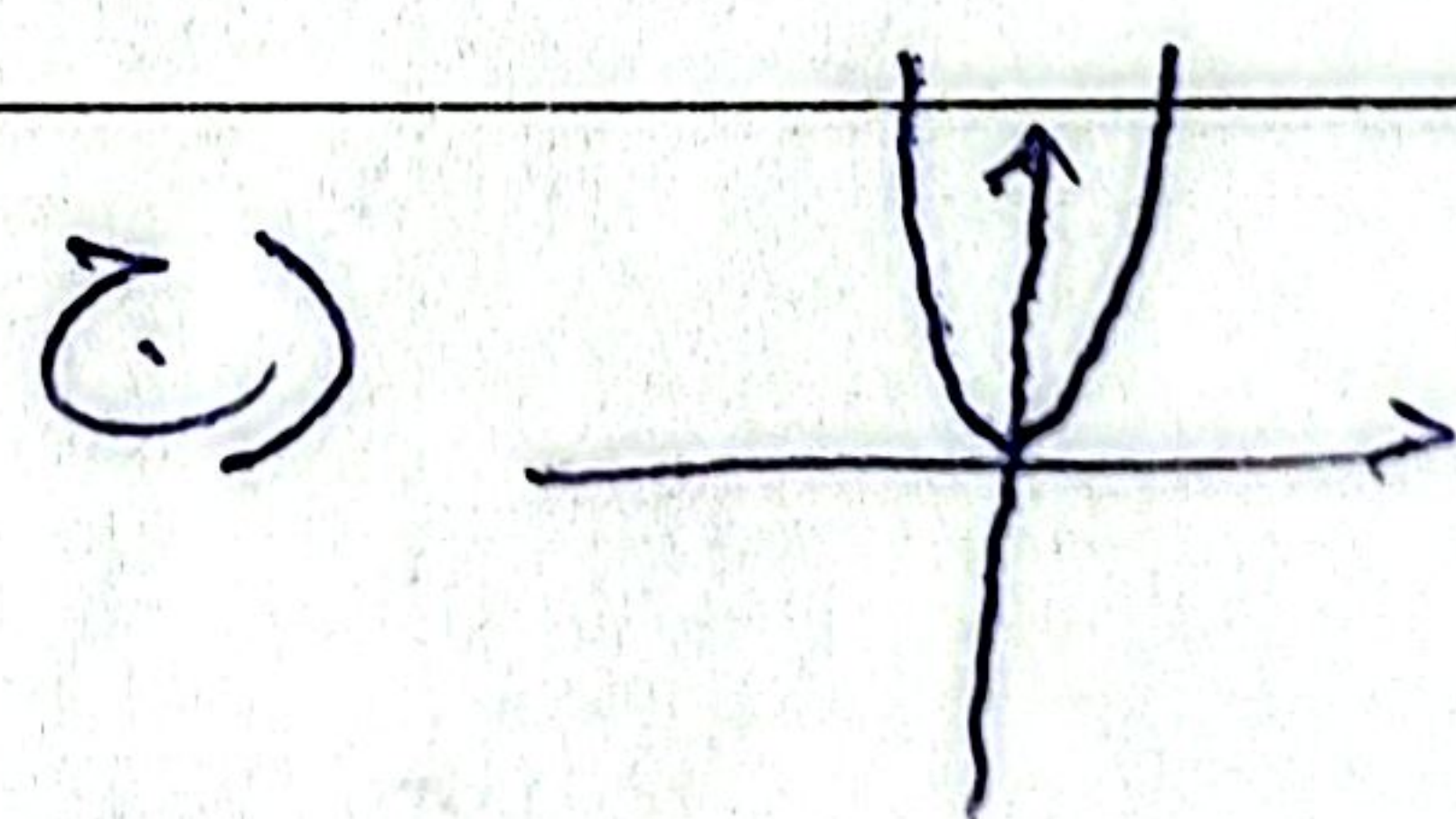
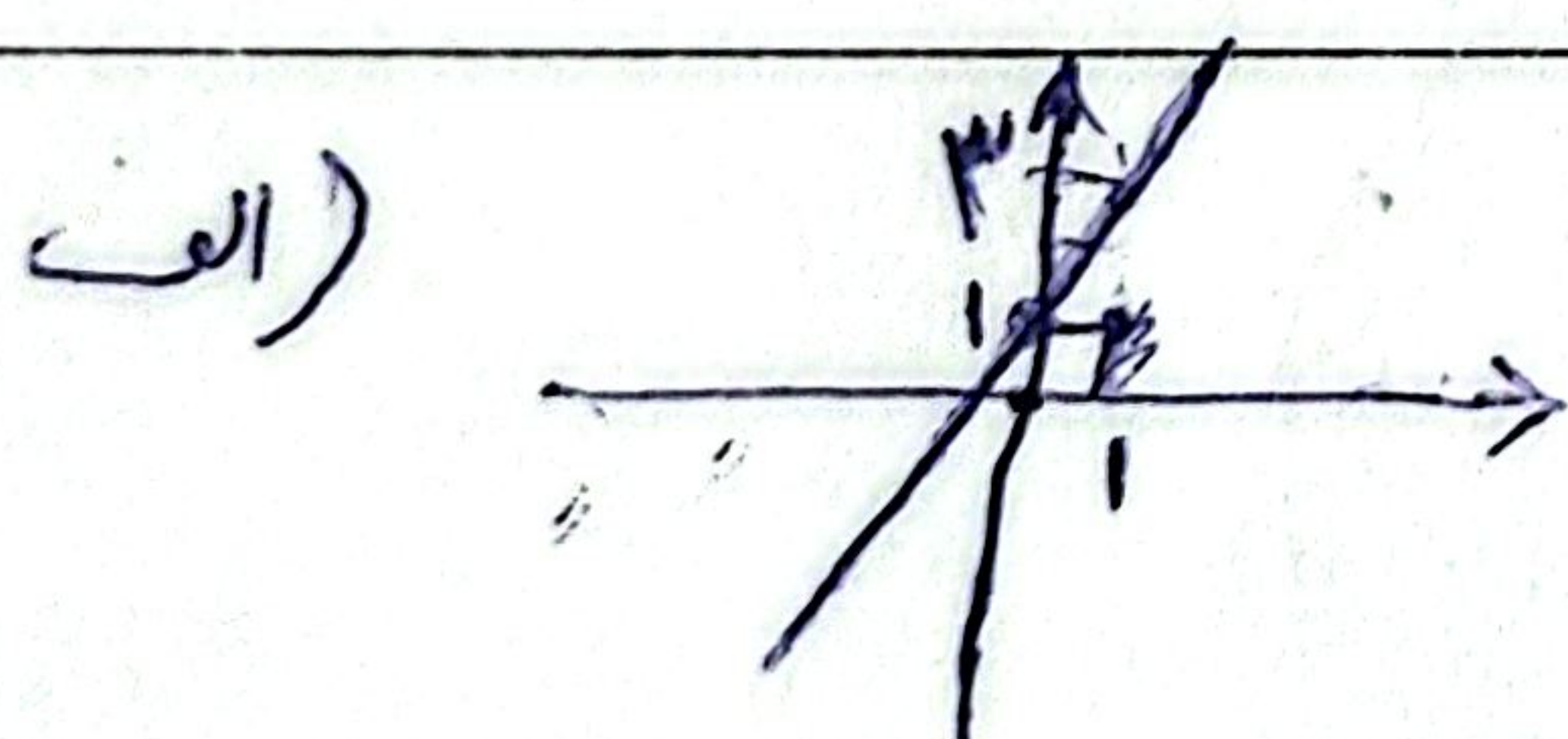
$y = 2x^2 + C \Rightarrow x=1, y=2$
 $2 = 2 + C \Rightarrow C=0 \Rightarrow y=2x^2$



ب) ۲

الف) تابع همبستگی $y=x$ پس $a=1$ و $b=0$ $a+2b=1$

ب) در سهمی طول، پس $a=1$ و $b=-2$
 $a+2b=-7$
 $-b = +2 \Rightarrow b = -2$



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الف) $y = \frac{x+2}{x^2-5x} \Rightarrow x(x-5) \neq 0 \Rightarrow D_f = \mathbb{R} - \{0, 5\}$

ب) $y = \frac{0x+5}{x^2-7x+19}$ $D_f = \mathbb{R}$ خرج ریشه حقیقی ندارد ←

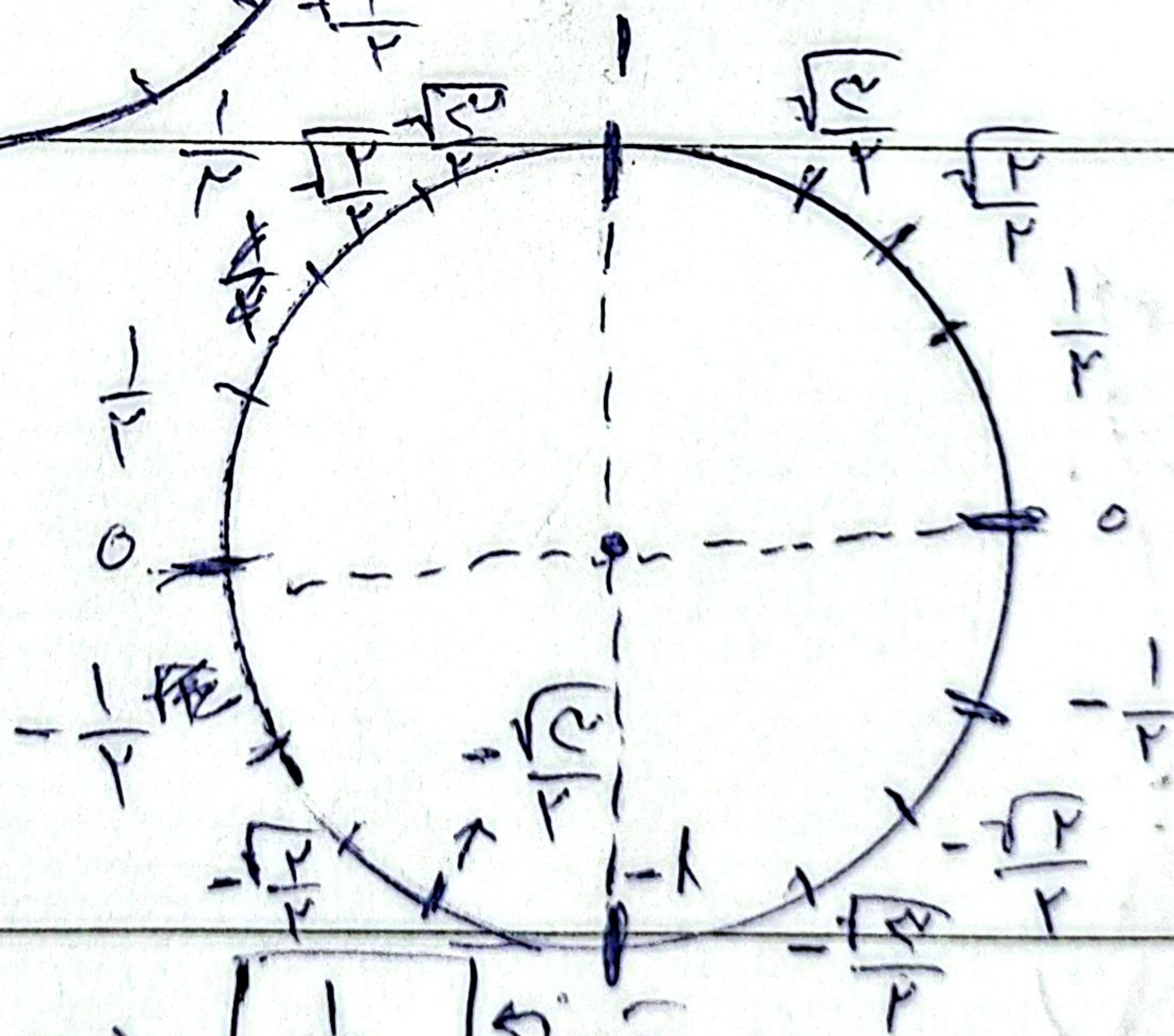
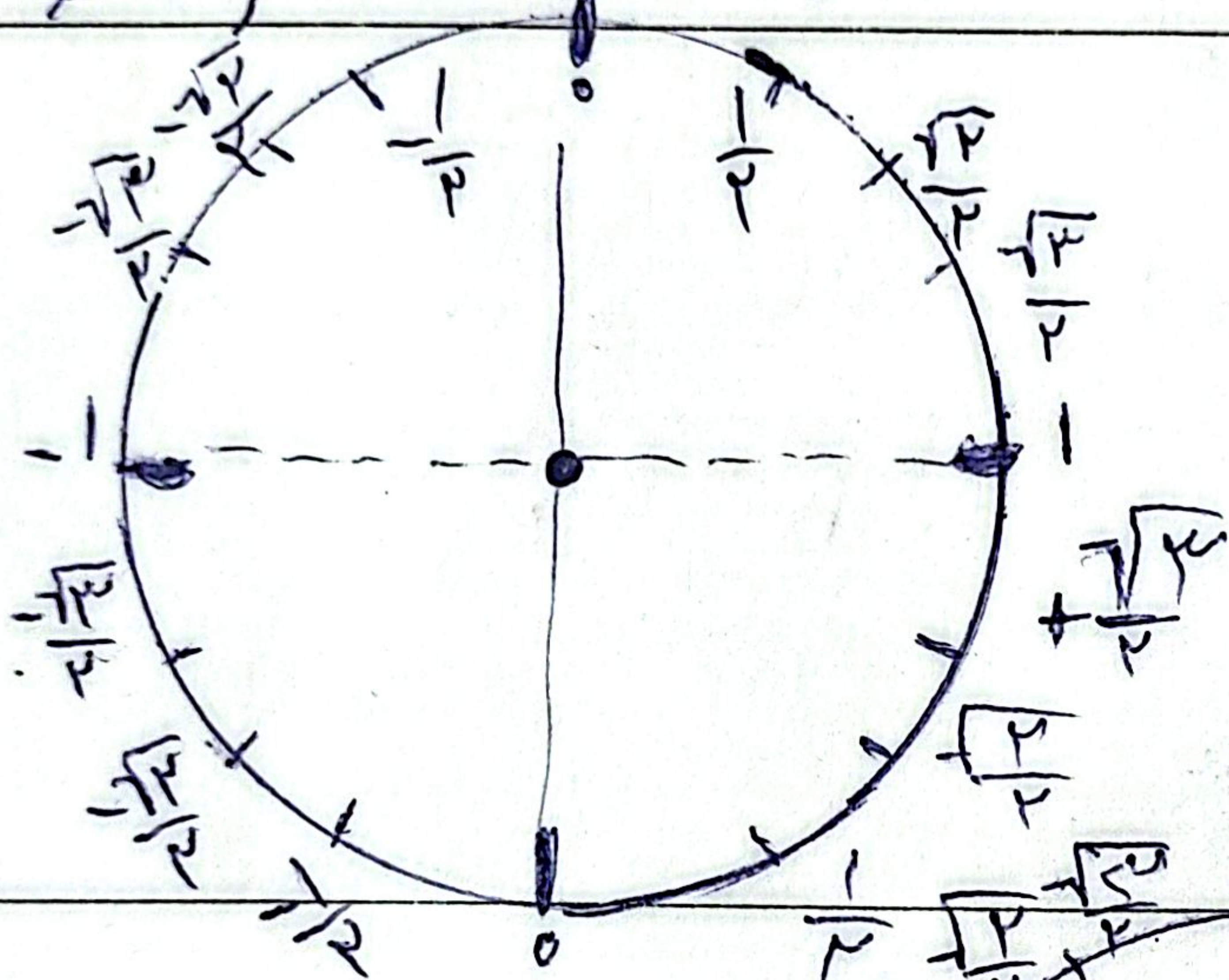
ج) $\frac{0x+5}{x^2+9x+5} \Rightarrow$ برای جداسازی ریشه حقیقی $\Rightarrow D_f = \mathbb{R}$ خرج ریشه حقیقی ندارد ←

د) $x^2 - 5x^2 = x^2(x^2-5)(x-2)(x+2) \Rightarrow D_f = \mathbb{R} - \{0, \pm 2\}$

الف) $\begin{cases} 4-x \geq 0 \Rightarrow x \leq 4 \\ x-2 \geq 0 \Rightarrow x \geq 2 \end{cases} \Rightarrow D_f = [2, 4]$

ب) $y = \frac{4x+1}{x^2+1}$ $\Rightarrow$ $D_f = \mathbb{R}$ مخرج همیشه مثبت

ج) $\begin{cases} x-2 \geq 0 \\ x-5 \neq 0 \end{cases} \Rightarrow x \geq 2, x \neq 5 \Rightarrow D_f = [2, 5) \cup (5, +\infty)$



الف) $\cos\left(\frac{2\pi}{3}\right) = -\frac{1}{2} \Rightarrow \left[-\frac{1}{2}\right]$ قرینه

$\Rightarrow \sin x = \frac{1}{2} \Rightarrow x = \frac{\pi}{6}, \frac{5\pi}{6}$ برای هم‌جهت‌یابی

ب) $\cos\left(\frac{11\pi}{4}\right) = \cos\left(-\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2} \Rightarrow \left[\frac{\sqrt{2}}{2}\right]$ قرینه

$\Rightarrow \sin x = -\frac{\sqrt{2}}{2} \Rightarrow x = \left\{ \frac{5\pi}{4}, \frac{3\pi}{4} \right\}$ برای هم‌جهت‌یابی

$|x| + x^2 = 0 \Rightarrow |x|(|x| + |x|) = 0 \Rightarrow x = 0 \Rightarrow D_f = \mathbb{R} - \{0\}$