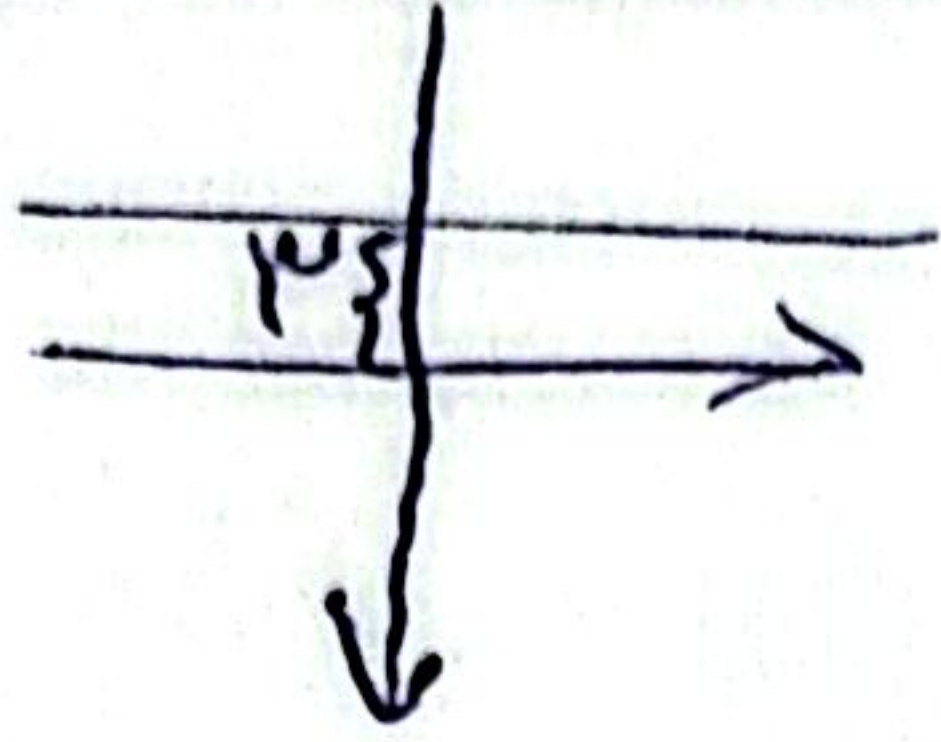


الف) $y^3 - x = 2x^2 \Rightarrow y^3 = 2x^2 + x \Rightarrow y = \sqrt[3]{2x^2 + x}$ تابع ✓

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 X

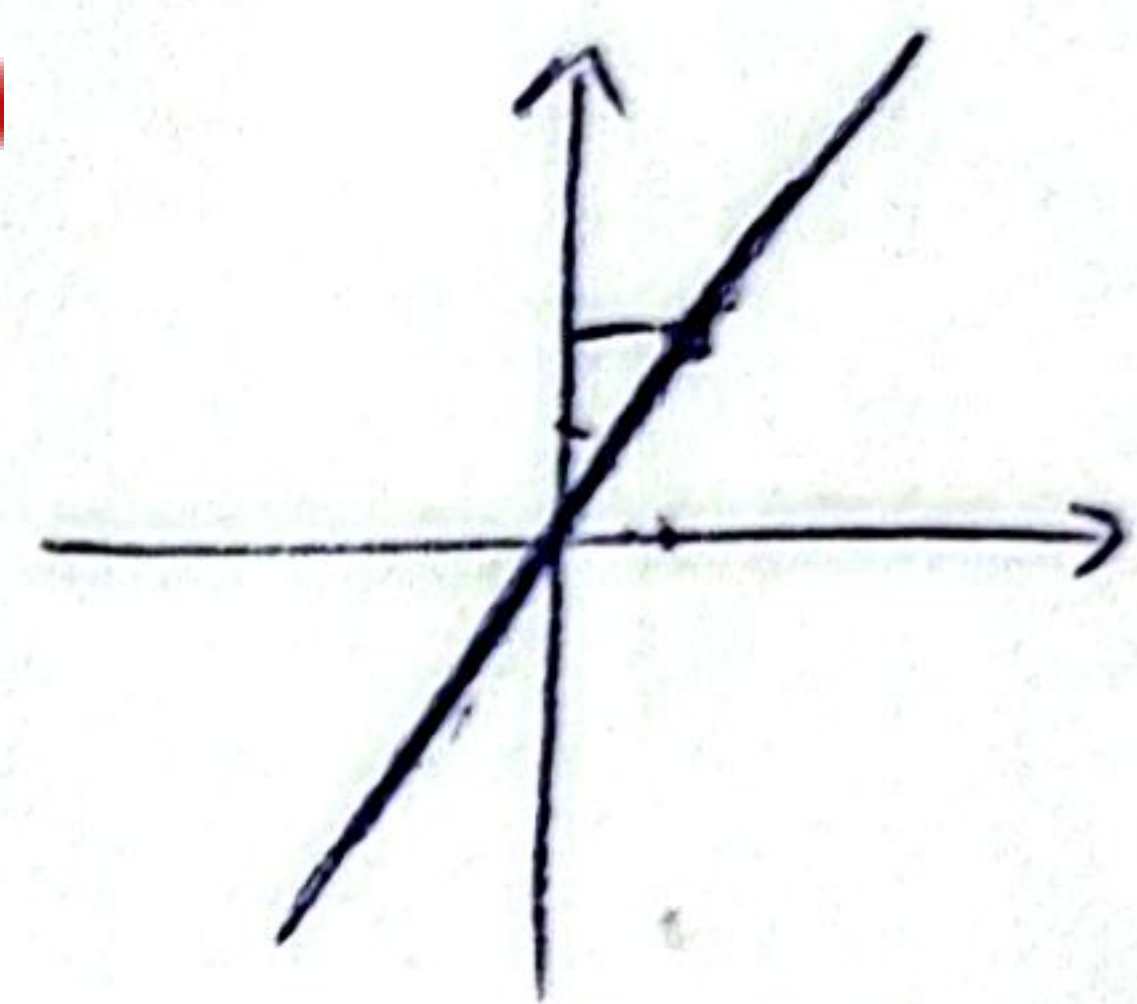
ج) $\sqrt{x-2} + |y-2| = 0 \Rightarrow x=2, y=2 \rightarrow (2,2)$ تابع ✓

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



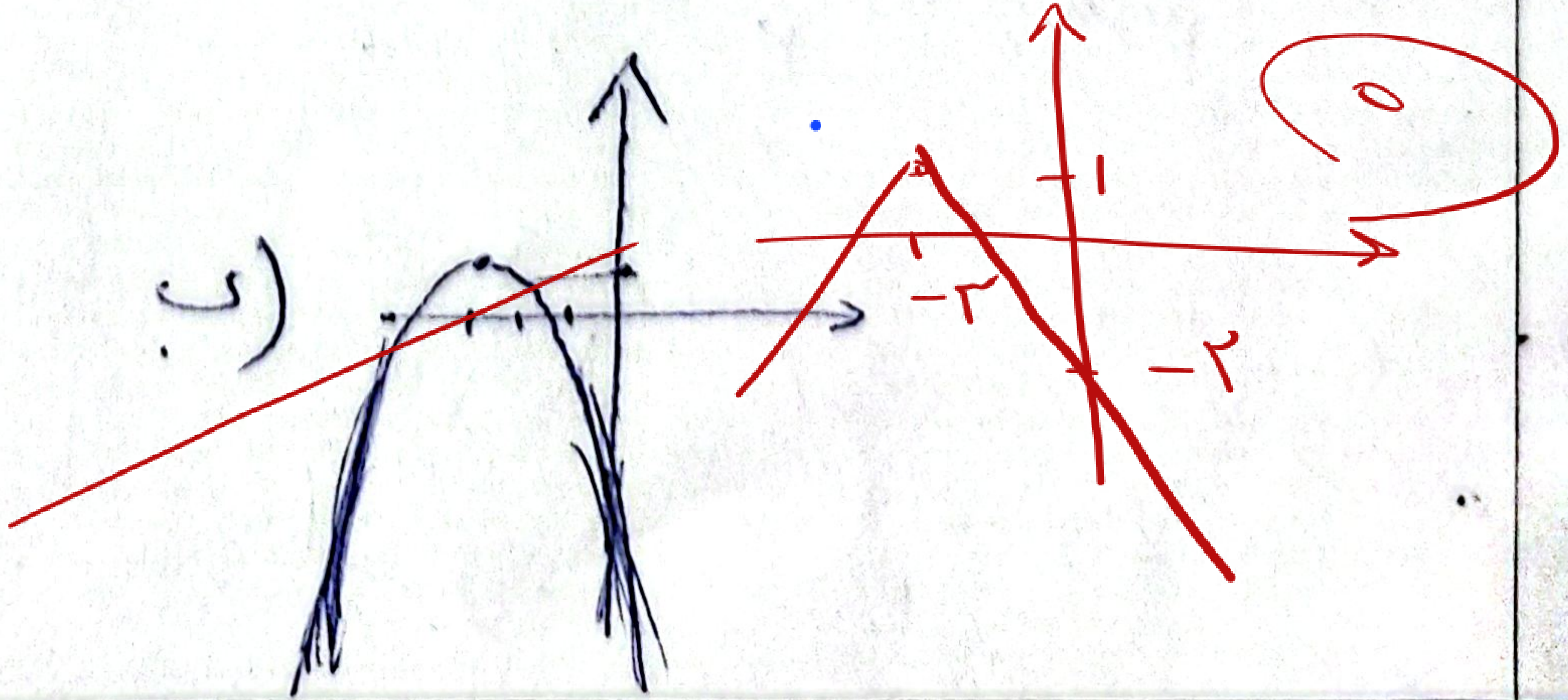
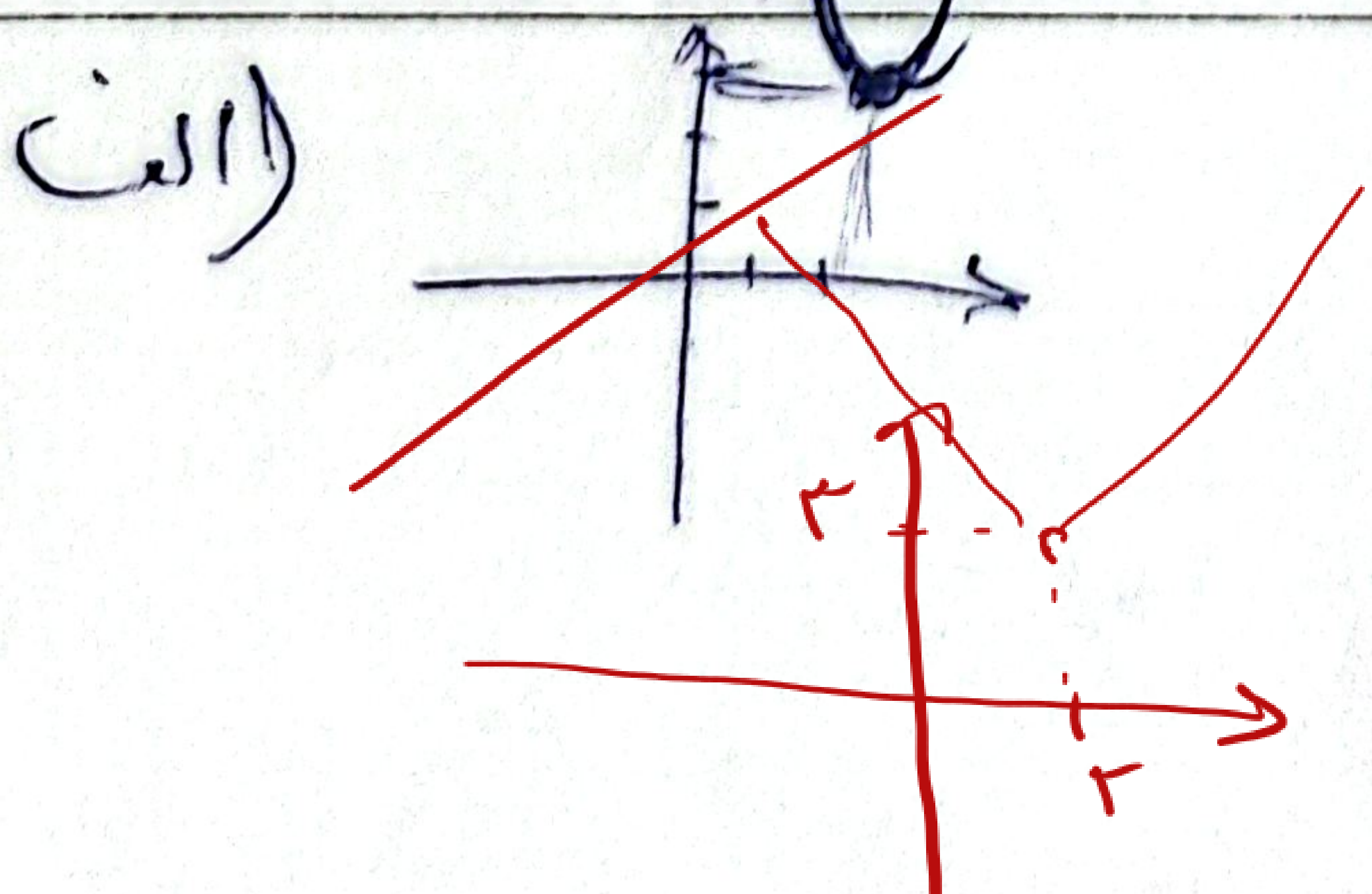
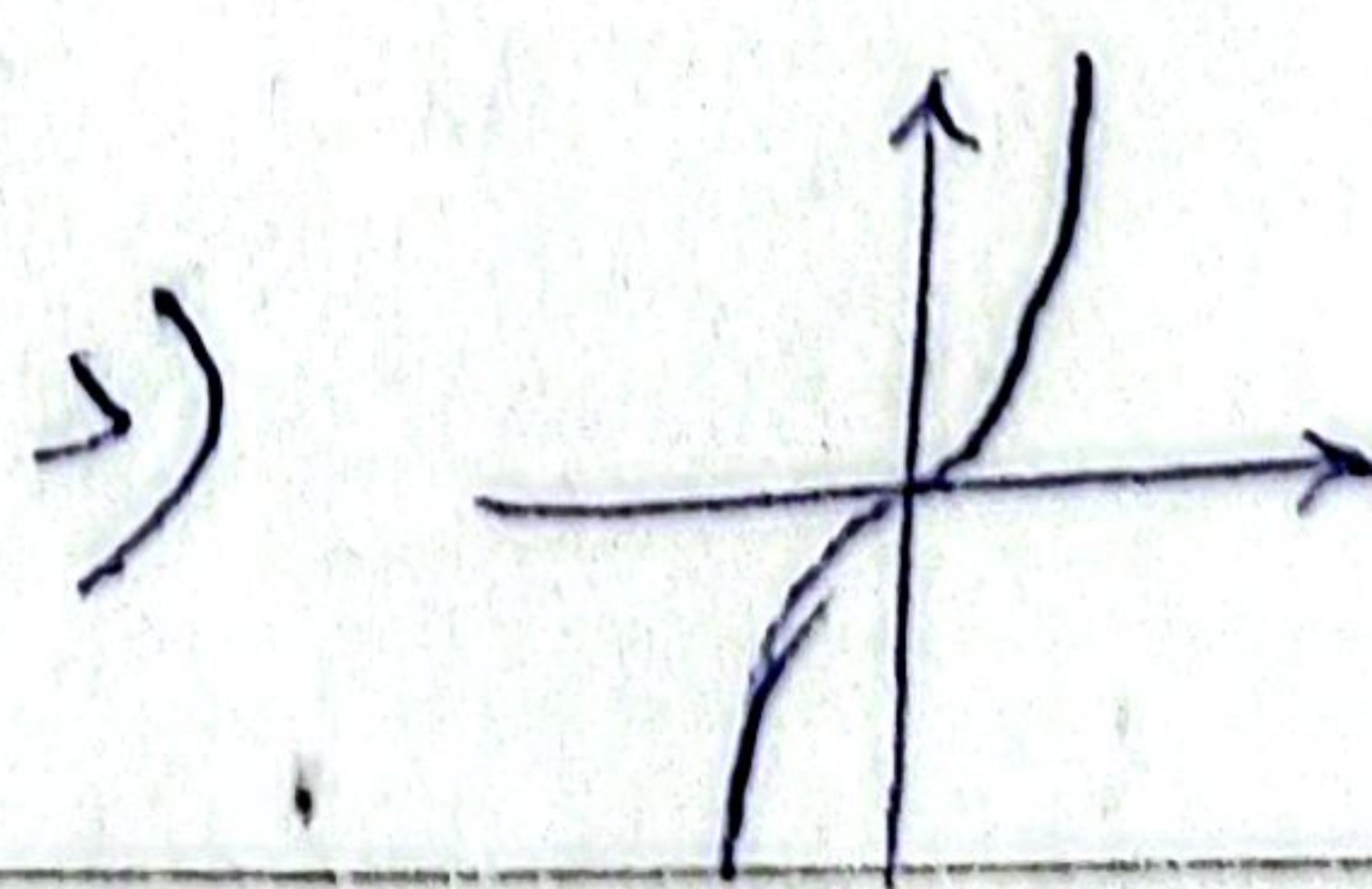
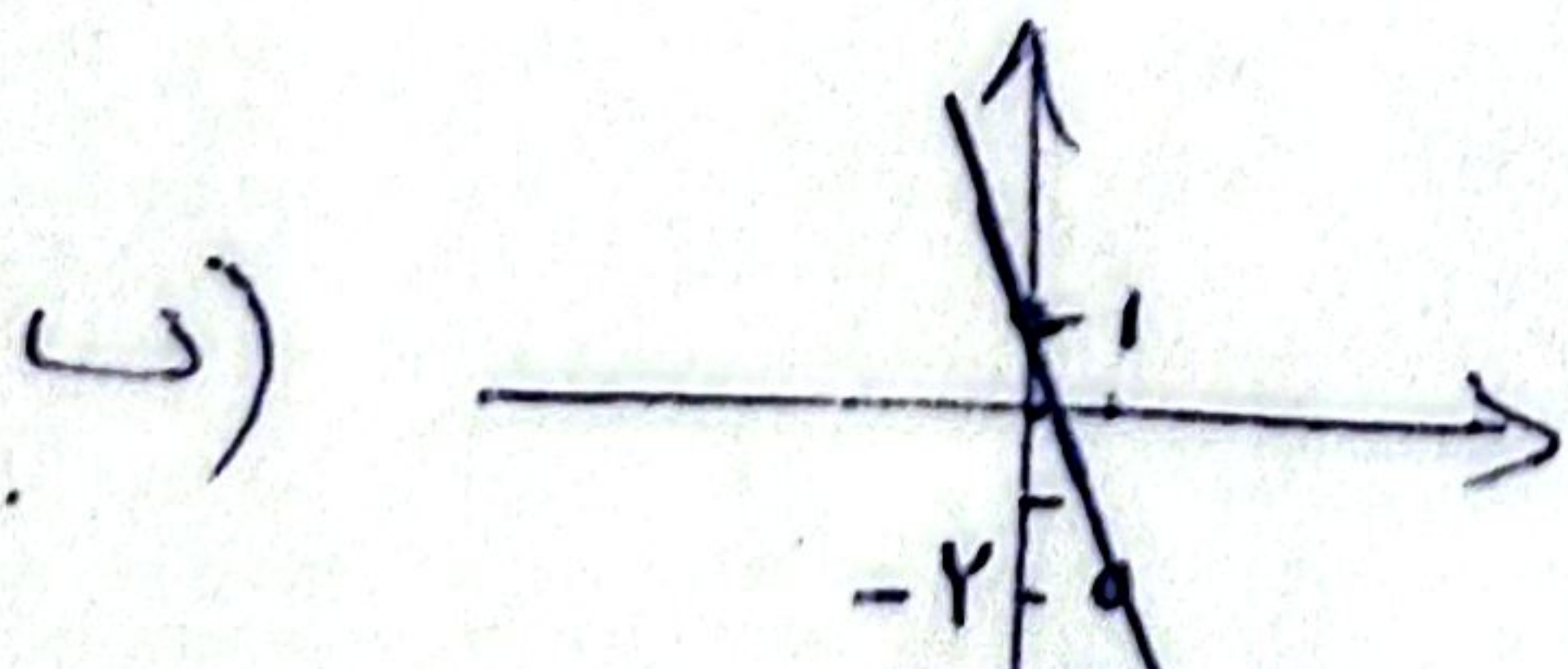
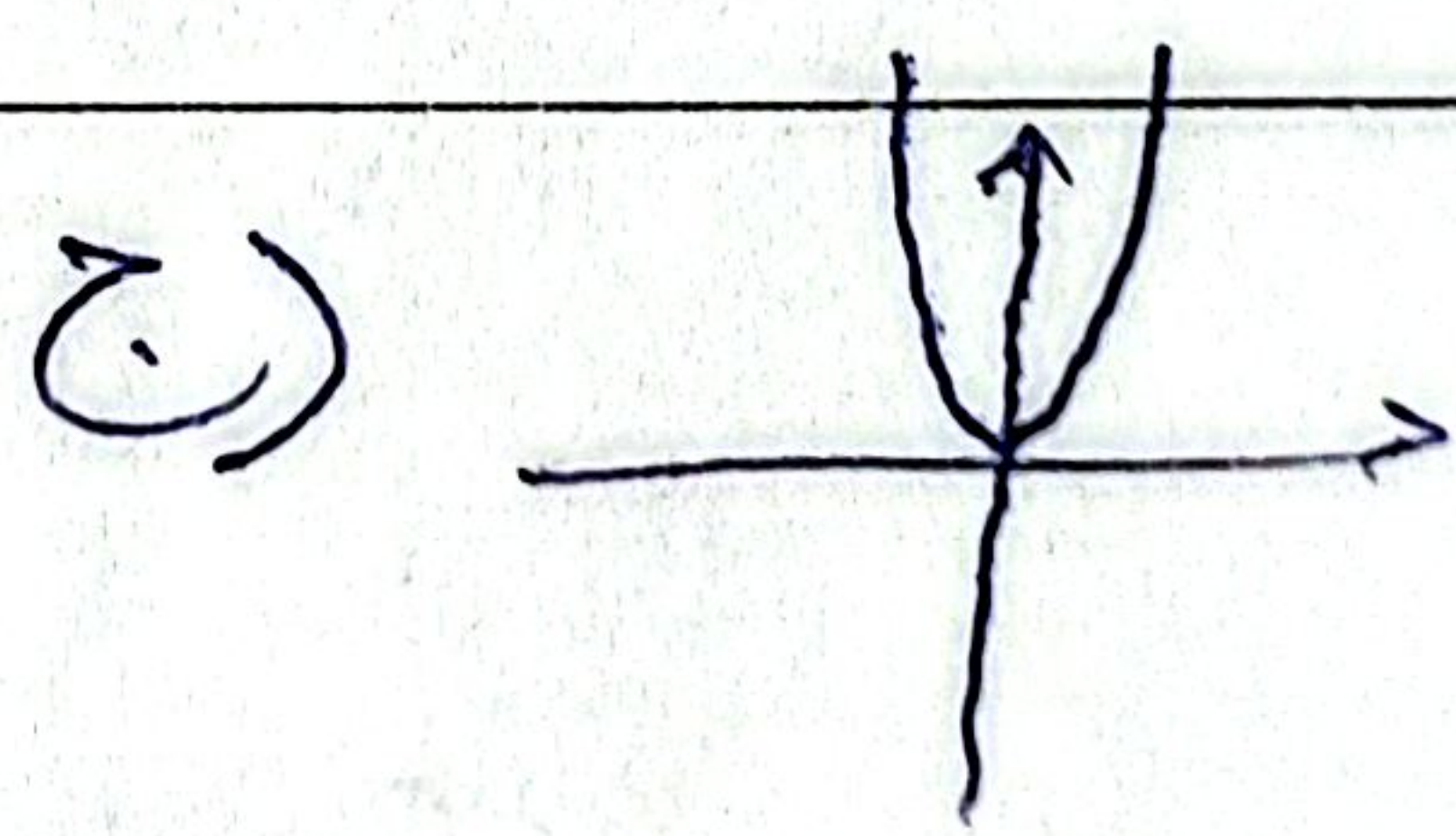
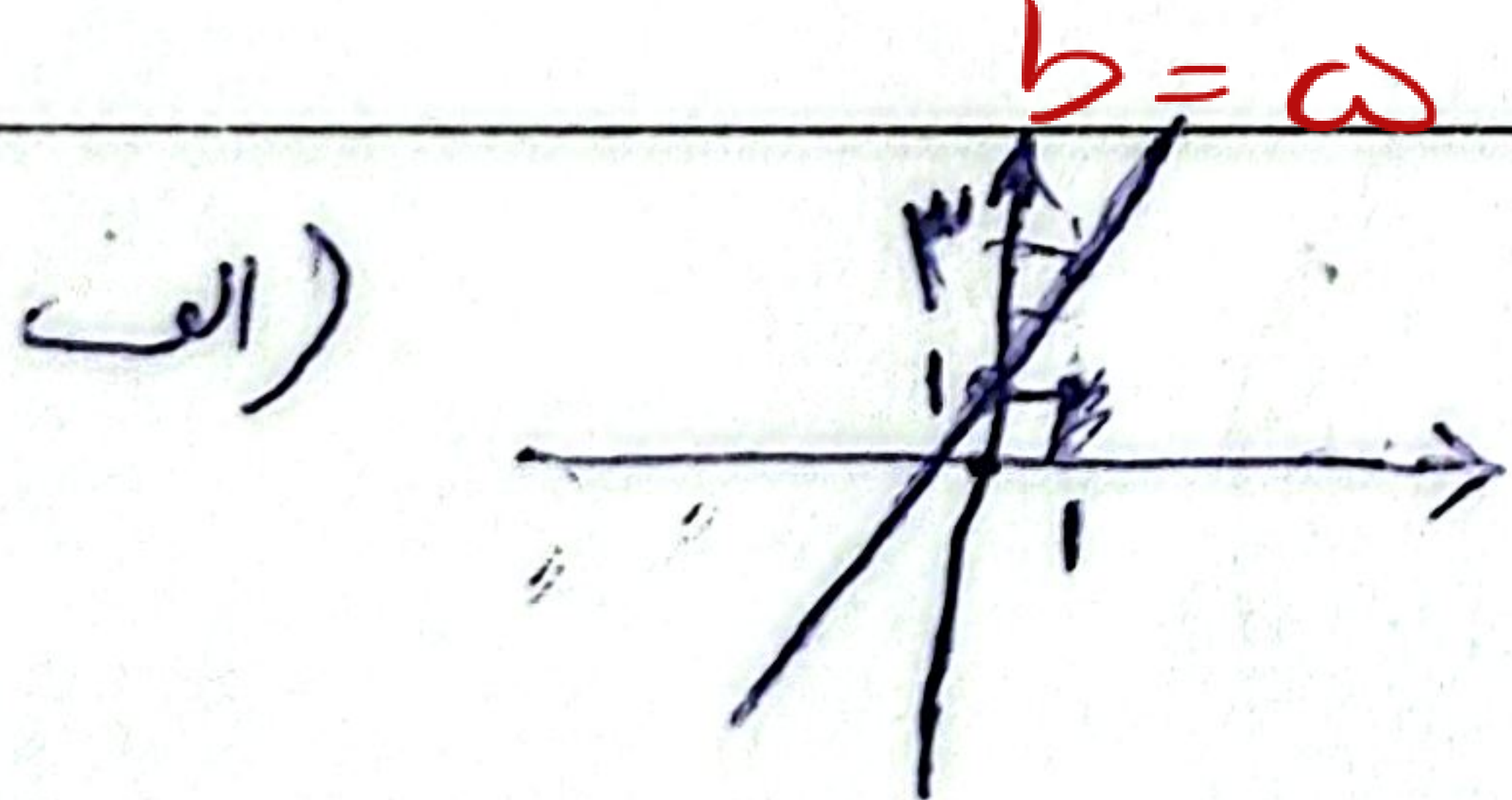
الف) ضابطه $y=3$

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



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

ب) در سهمی طول، اُس $2 = \frac{-b}{2a}$
 $2 = \frac{-b}{2 \cdot 1} \Rightarrow b = -4$
 $a+2b=1 \Rightarrow 1-8=-7$
 $a+2b=1 \Rightarrow 1-4=-3$
 $a+2b=1 \Rightarrow 1-4=-3$



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

ب) $y = \frac{0x+5}{x^2-7x+19}$ $D_f = \mathbb{R}$ ۵ خرج ریشه حقیقی ندارد

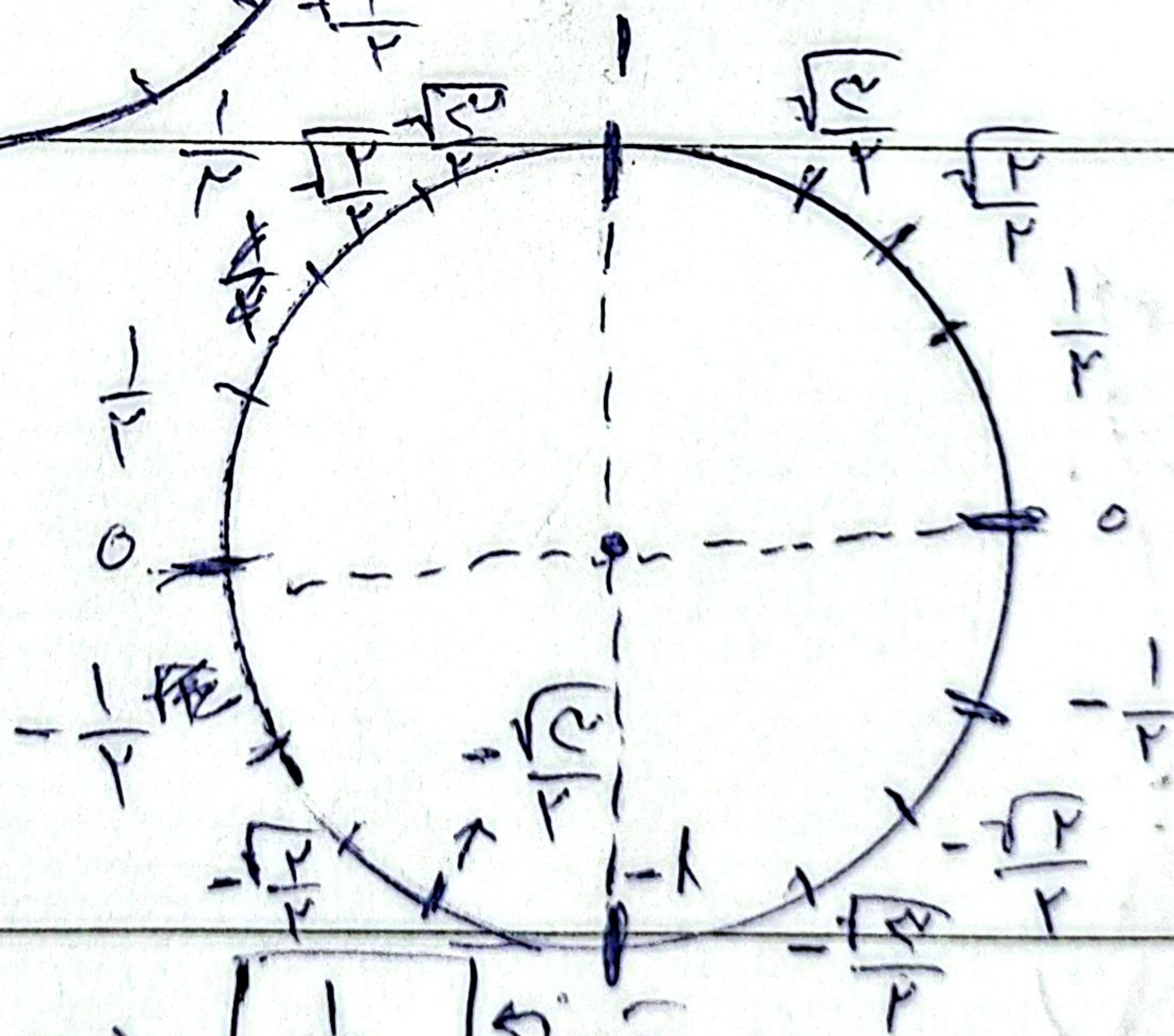
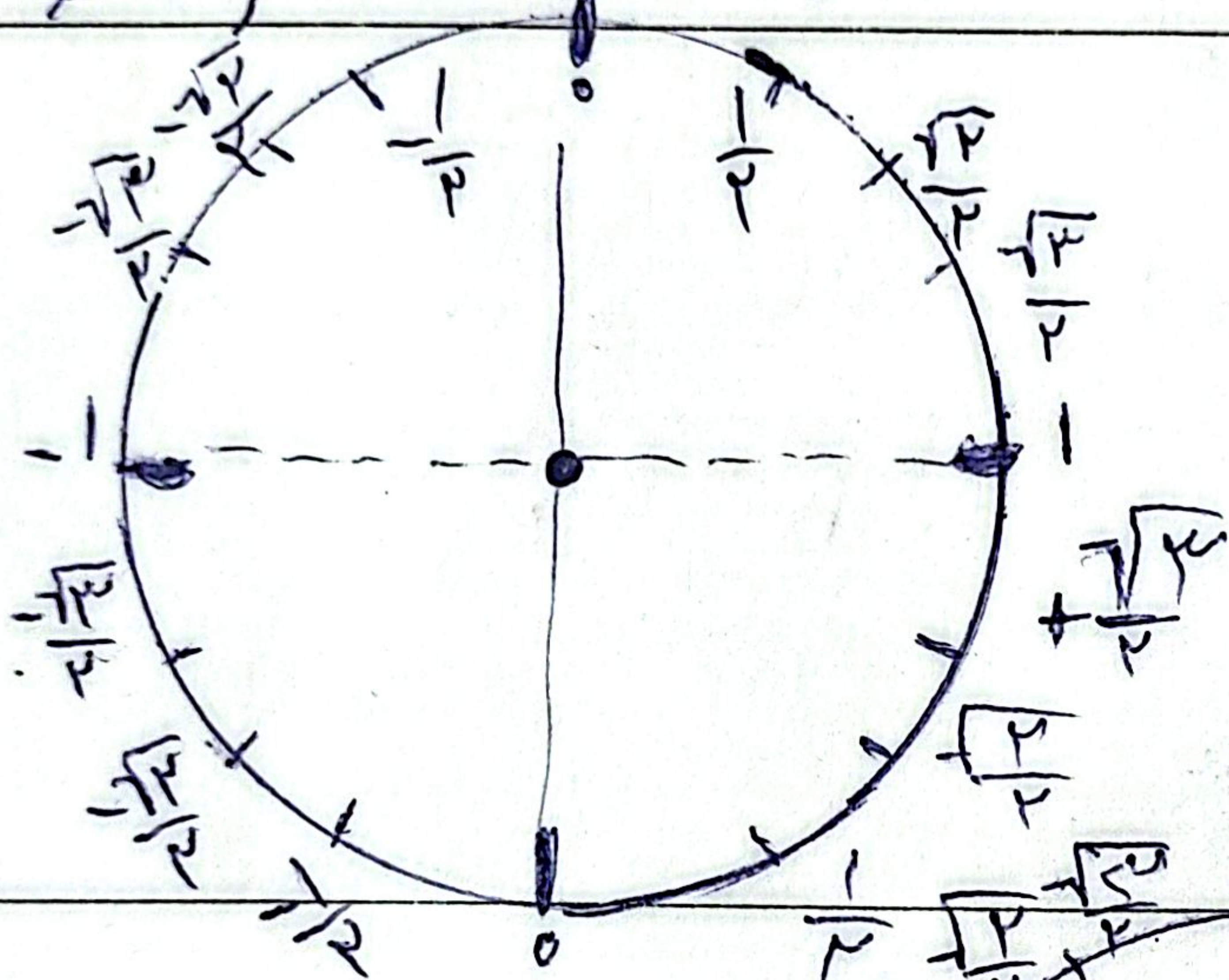
ج) $\frac{0x+5}{x^2+9x+5} \Rightarrow$ برای هر x حقیقی $\Rightarrow D_f = \mathbb{R}$ ۵ خرج ریشه حقیقی ندارد

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

الف) $\begin{cases} 4-x \geq 0 \Rightarrow x \leq 4 \\ x-2 \geq 0 \Rightarrow x \geq 2 \end{cases} \Rightarrow D_f = [2, 4]$ ۵

ب) $y = \frac{5x+1}{x^2+1}$ $\Rightarrow D_f = \mathbb{R}$ ۵ 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) $\cos\left(\frac{2\pi}{3}\right) = -\frac{1}{2} \Rightarrow \left[-\frac{1}{2}\right]$ ۵ قرینه

$\Rightarrow \sin x = \frac{1}{2} \Rightarrow x = \frac{\pi}{6}, \frac{5\pi}{6}$ ۵ برای هر x حقیقی

ب) $\cos\left(\frac{11\pi}{4}\right) = \cos\left(-\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2} \Rightarrow \left[\frac{\sqrt{2}}{2}\right]$ ۵ قرینه

$\Rightarrow \sin x = -\frac{\sqrt{2}}{2} \Rightarrow x = \left\{ \frac{5\pi}{4}, \frac{3\pi}{4} \right\}$ ۵ برای هر x حقیقی

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