

Y

1

$$|x_{k+1} - p| - |x_k - p| = k$$

$$f(x) = \begin{cases} -Y_{n+1} & x \leq -Y \\ -E_{n+1} & -Y \leq x \leq Y \\ Y_{n+1} & x \geq Y \end{cases}$$

$$-P_{\text{H}_2\text{O}} = 1 \Rightarrow q = -P$$

$$-p_{m+1} = 9 \Rightarrow q = -1 \Rightarrow 10 \neq 1$$

$$y_H - \omega = q \Rightarrow q = v$$

۳- $K \rightarrow$ فقط کافی شکلش باشد

①

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21) $y = Y_{\text{ref}} - [Y_{\text{ref}}] \Rightarrow R_f = [0 \ 9 \ 1]$ ✓

$$c) y = \sum_{n=1}^{\infty} \frac{1}{n^2} \Rightarrow R_f = (0, \infty) \checkmark$$

8.) $y = u - \omega \left[\frac{u}{\omega} \right] \Rightarrow R_F = \mathbb{I} \text{ } [0, \omega)$

c) $y = [P_A] - P_A \Rightarrow -(P_A - [P_A]) \Rightarrow (-190) \checkmark$

1, A

الف) $P \sin x + P \cos x \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}] \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}]$ ✓

ب) $P \sin x - P \cos x \Rightarrow R_f = [-2, 2]$ ✓

ج) $[P \sin x + \omega \cos x] \Rightarrow R_f \Rightarrow [-\sqrt{P^2 + \omega^2}, \sqrt{P^2 + \omega^2}] \Rightarrow R_f = [-2, 2]$ ✓

د) $y = \sqrt{\cos x - P \sin x} \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}] \Rightarrow R_f = [-\sqrt{2}, \sqrt{2}]$
دو بار دایره‌های تریگ

الف) $y = \sin^2 x + 3 \sin x + 2 \Rightarrow -\frac{b}{2a} = -\frac{3}{2} \Rightarrow (-\frac{3}{2})^2 + 3(-\frac{3}{2}) + 2$
 $\Rightarrow \frac{9}{4} - \frac{9}{2} + 2 \Rightarrow \frac{9}{4} - \frac{18}{4} + \frac{8}{4} = -\frac{1}{4} \Rightarrow \min \Rightarrow \sin x = 1 \Rightarrow y = 4 \Rightarrow R_f = [\frac{1}{4}, 4]$

ب) $y = P \sin^2 x + 3 \sin x + 2 \Rightarrow -\frac{b}{2a} = -\frac{3}{P} \Rightarrow P(-\frac{3}{P})^2 + 3(-\frac{3}{P}) + 2$
 $\Rightarrow P \cdot \frac{9}{P} - \frac{9}{P} + 2 \Rightarrow \frac{9}{P} - \frac{9}{P} + \frac{2P}{P} \Rightarrow \frac{2P}{P} \Rightarrow \min \Rightarrow \sin x = 1 \Rightarrow y = 2$
 $\Rightarrow R_f = [\frac{2}{P}, 2]$ ✓

الف) $y = \sin^2 x + \epsilon \cos^2 x \Rightarrow y = \sin^2 x + \epsilon(1 - \sin^2 x) \Rightarrow y = \sin^2 x + \epsilon - \epsilon \sin^2 x \Rightarrow y = \epsilon - P \sin^2 x$
 $\Rightarrow P(1 - \sin^2 x) + 1 \Rightarrow 1 + P \cos^2 x \Rightarrow x = 0 \Rightarrow y = 1$ و $x = 1 \Rightarrow y = \epsilon \Rightarrow R_f = [\epsilon, 1]$

ب) $\frac{P \cot x}{1 + \cot^2 x} \Rightarrow \frac{P \cos}{\sin} \Rightarrow \frac{P \cos}{\sin} \Rightarrow \frac{\cos^2 \sin^2 (P \cos)}{\sin^2 (\sin^2 \cos^2 + \cos^2)} \Rightarrow \frac{P \cos^3}{\cos^2 (\sin^2 + \cos^2)}$
 $\Rightarrow P \cos = y \Rightarrow R_f = [-1, 1]$

الف) $y = \sin^2 x + \cos^2 x \Rightarrow R_f = [\frac{1}{2}, 1]$ ✓

ب) $y = [\sin^2 x + \cos^2 x] \Rightarrow [\frac{1}{2}, 1] \Rightarrow$ برآورد $\Rightarrow [0, 1]$ ✓

الف) $y = \frac{Pn^2 + Vn - F}{n + F} \Rightarrow \frac{\frac{1}{2}(Pn + V)(Pn - 1)}{n + F} \Rightarrow \frac{(n + F)(Pn - 1)}{(n + F)} \Rightarrow Pn - 1$
 $R_f = [R - \{ -9 \}]$ ✓ $D = [R - \{ -9 \}]$ $P_{R-1} = -9$ دامنه رو حتماً ذکر کن

ب) $y = \frac{n^2 - 1}{n - 1} \Rightarrow \frac{(n - 1)(n + 1)}{(n - 1)} \Rightarrow n + 1 \Rightarrow R_f = [1, \infty)$

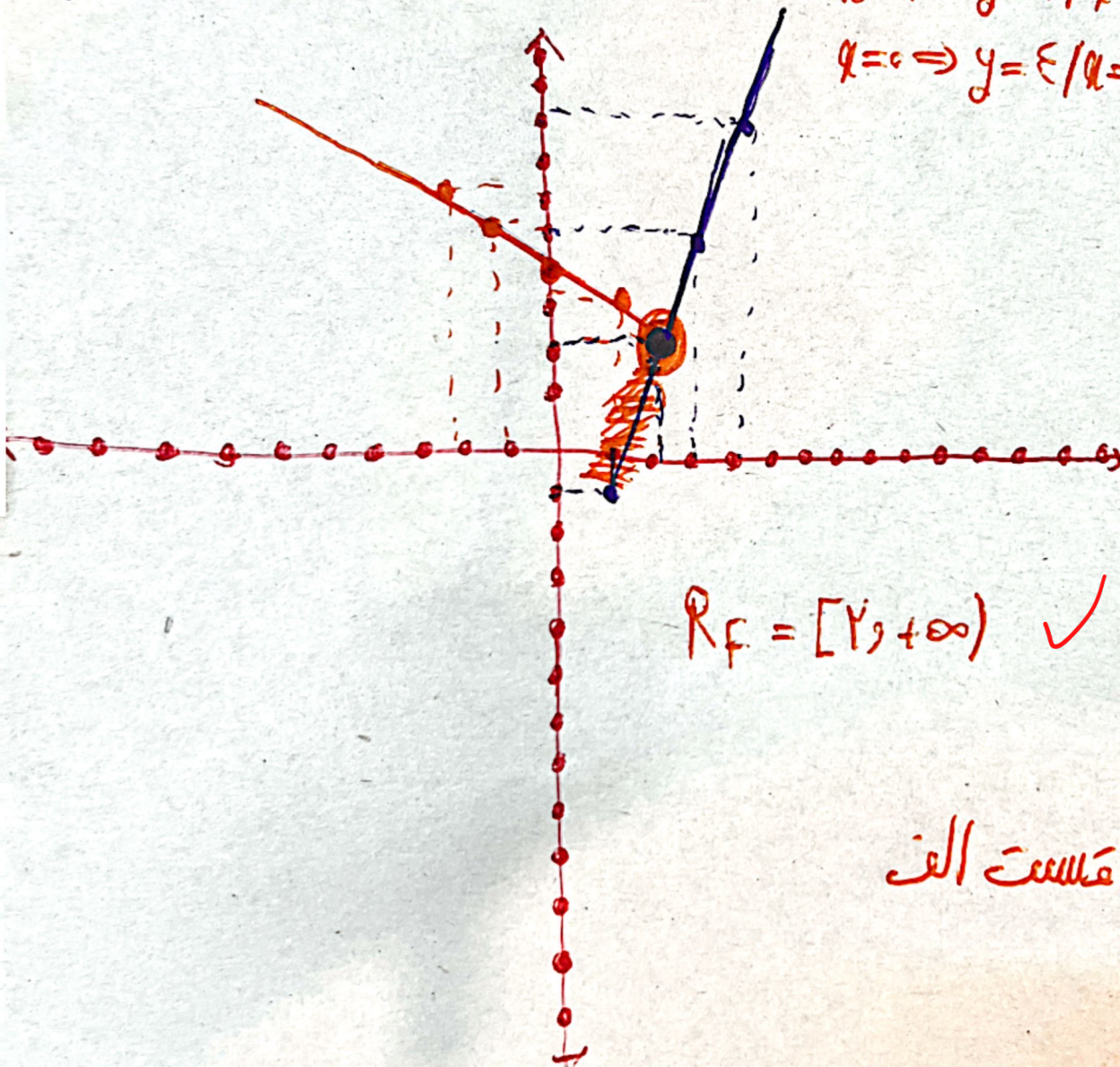
$$y = x + |2x - \varepsilon| \Rightarrow 2x - \varepsilon = 0 \Rightarrow x = \frac{\varepsilon}{2}$$

~~2x~~

x	y
$\frac{\varepsilon}{2}$	$-\frac{\varepsilon}{2}$
$\frac{\varepsilon}{2}$	$\frac{\varepsilon}{2}$

$$x \geq \frac{\varepsilon}{2} \Rightarrow x + |2x - \varepsilon| \Rightarrow 3x - \varepsilon \Rightarrow x = \frac{\varepsilon}{3} \Rightarrow y = -\frac{\varepsilon}{3} / x = \frac{\varepsilon}{2} \Rightarrow y = \frac{\varepsilon}{2}$$

$$x \leq \frac{\varepsilon}{2} \Rightarrow x + (\varepsilon - 2x) \Rightarrow \varepsilon - x \Rightarrow x = \frac{\varepsilon}{2} \Rightarrow y = \frac{\varepsilon}{2} / x = \frac{\varepsilon}{2} \Rightarrow y = \frac{\varepsilon}{2}$$



$$R_f = [\frac{\varepsilon}{2}, +\infty) \quad \checkmark$$

لقد ال بك فقلت الف

$$y = |x-2| + |x-1| - |x|$$

$$x=2 \quad x=1 \quad x=0$$

x	0	1	2
$ x $	-	+	+
$ x-1 $	-	-	+
$ x-2 $	-	-	+

لقد اكدت على ان

لقد اكدت على ان

$$① x \leq 0 \Rightarrow 2-x + 1-x + x \Rightarrow 3-x$$

$$② 0 \leq x \leq 1 \Rightarrow 2-x + 1-x - x \Rightarrow 3-3x$$

$$③ 1 \leq x \leq 2 \Rightarrow 2-x + x-1 - x \Rightarrow 1-x$$

$$④ x \geq 2 \Rightarrow x-2 + x-1 - x \Rightarrow x-3$$

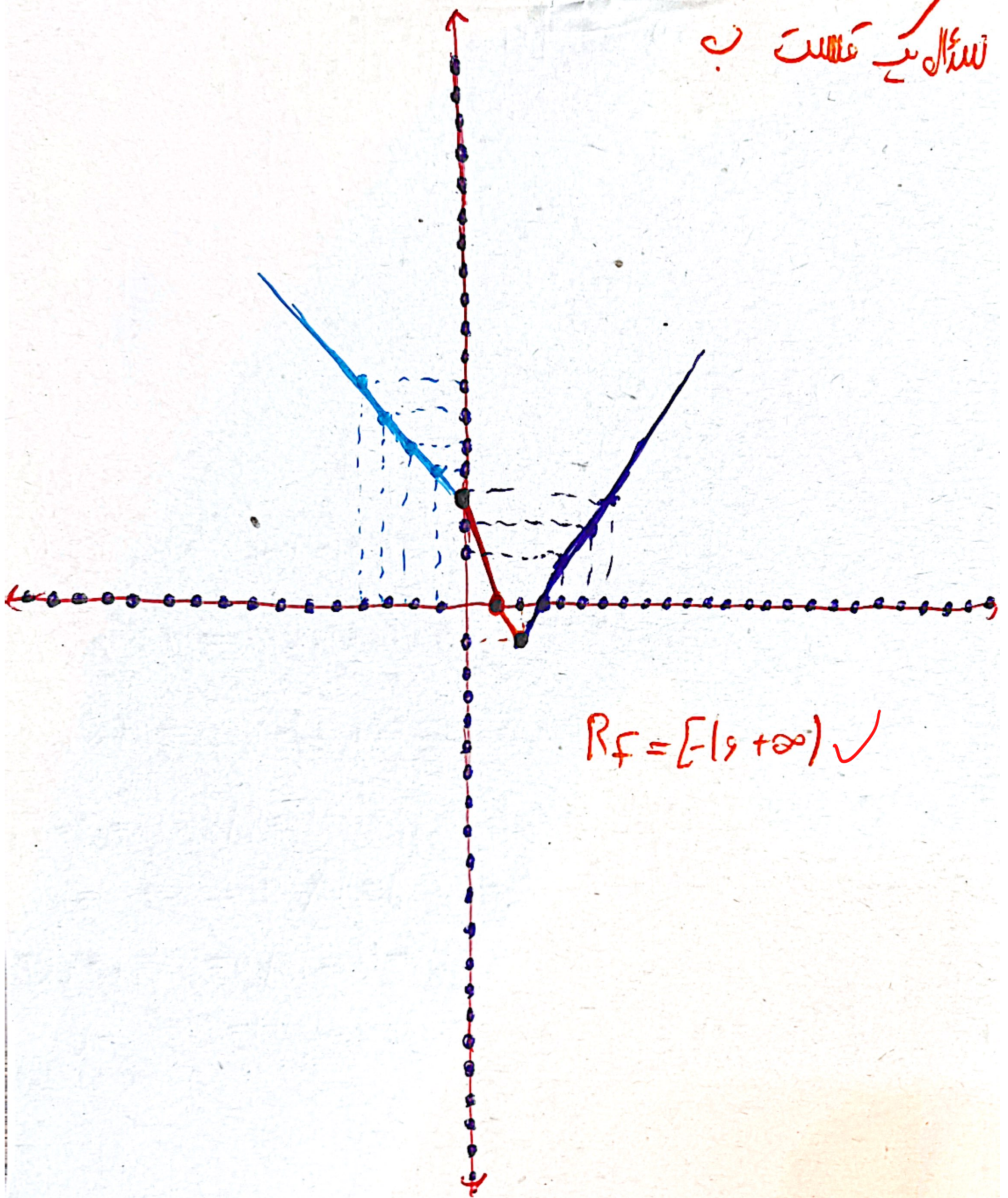
$$① x=0 \Rightarrow y=3/x=-1 \Rightarrow y=2/x=-2 \Rightarrow y=1/x=-1 \Rightarrow y=1/x=-1 \Rightarrow y=1$$

$$② x=0 \Rightarrow y=3 \neq x=1 \Rightarrow y=0$$

$$③ x=1 \Rightarrow y=0 / x=2 \Rightarrow y=-1$$

$$④ x=2 \Rightarrow y=1/x=1/2 \Rightarrow y=0/x=3 \Rightarrow y=1/x=1/3 \Rightarrow y=2/x=2/3 \Rightarrow y=1$$

نسبہ کے غلطی ب



$$R_f = [-1, +\infty) \checkmark$$

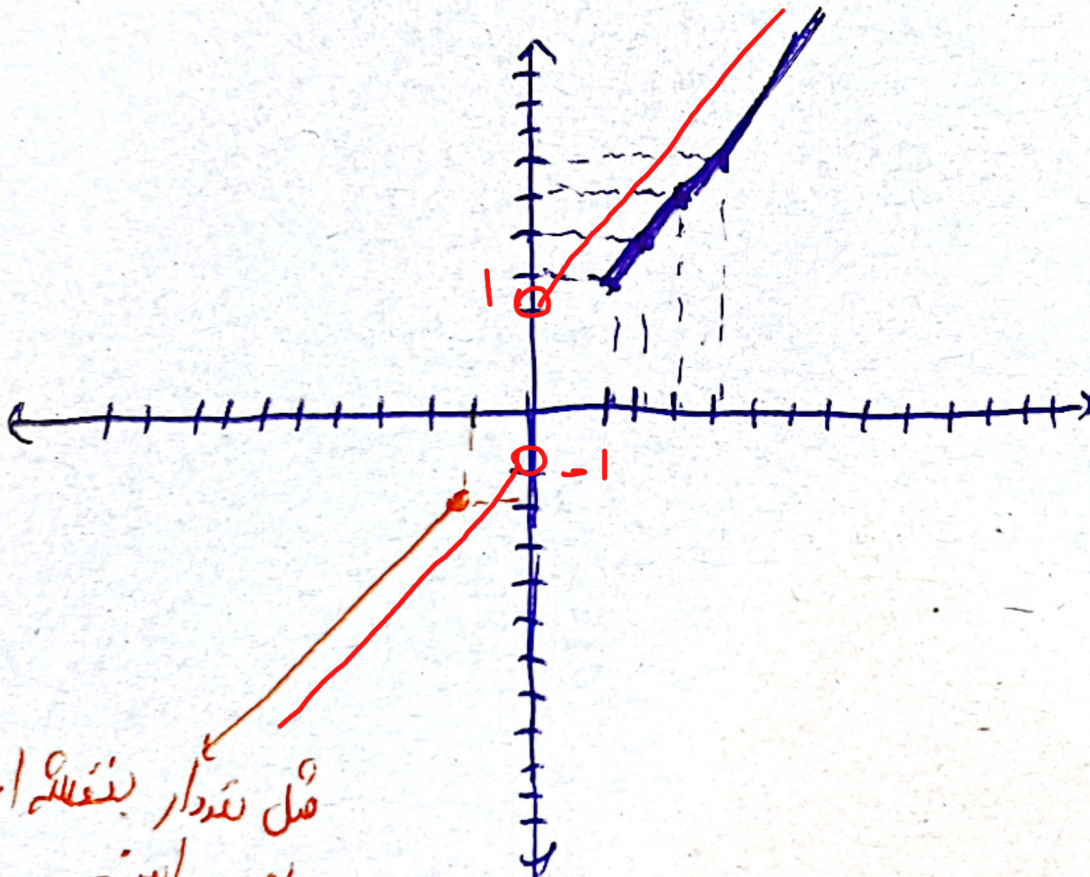
سؤال ٣ الف)

$$y = x + \frac{x}{|x|}$$

$$\frac{x}{|x|} \begin{array}{c|c} x & 0 \\ \hline |x| & - \quad + \end{array}$$

$$x > 0 \Rightarrow x + 1 \Rightarrow x = 1 \Rightarrow y = 2 / x = 2 \Rightarrow y = 2 / x < 0 \Rightarrow y = -2$$

$$x < 0 \Rightarrow x - 1 \Rightarrow x = -1 \Rightarrow y = -2 / x = -1 \Rightarrow y = -2 / x < -1 \Rightarrow y = -2$$



فصل بعدادار بنقله اما
او به پاسن

المعادلة للمماس

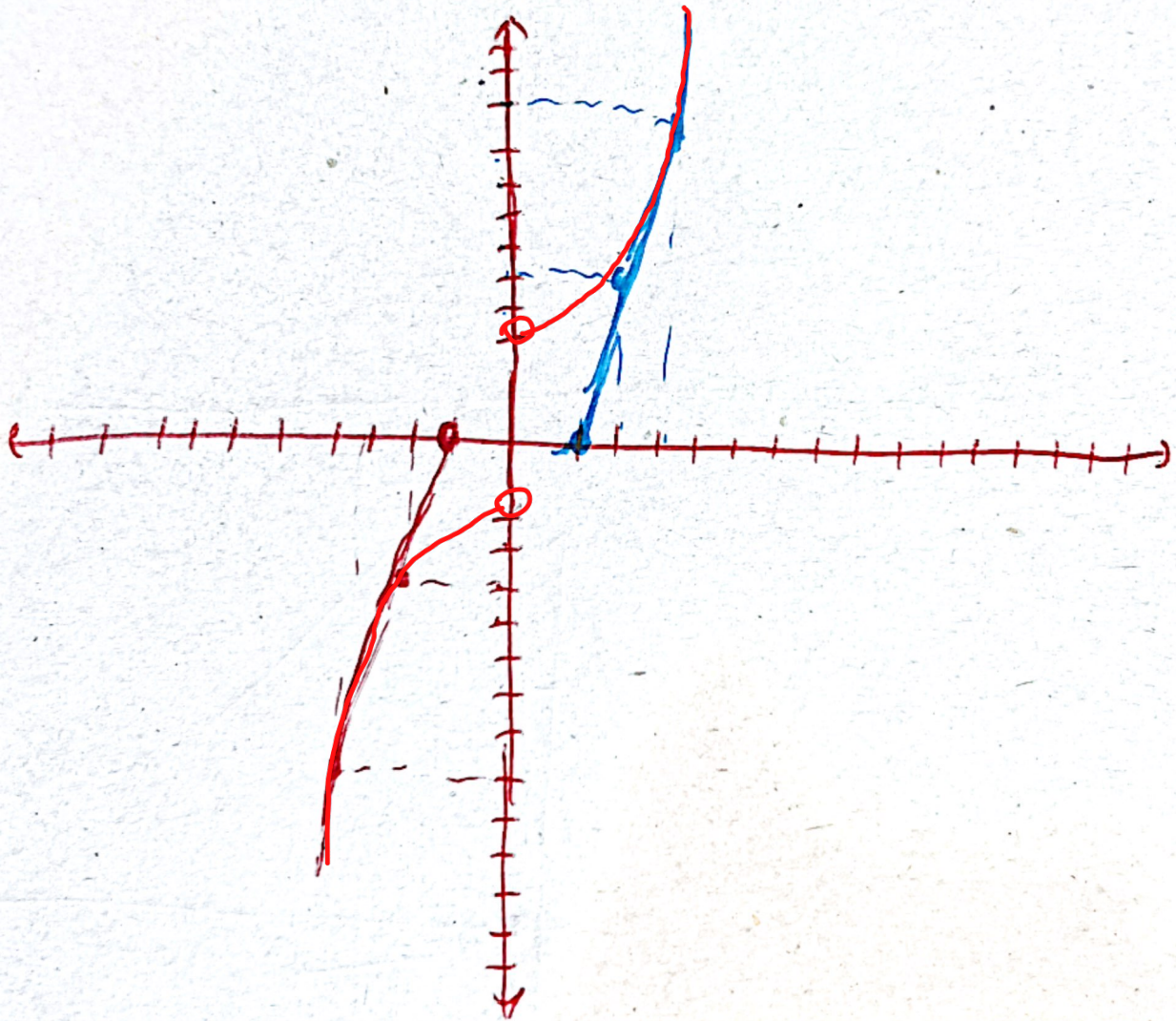
$$y = x|x| - \frac{x}{|x|}$$

$$\frac{x}{|x|} \begin{array}{c} 0 \\ + \quad 0 \quad + \end{array}$$

$$x > 0$$

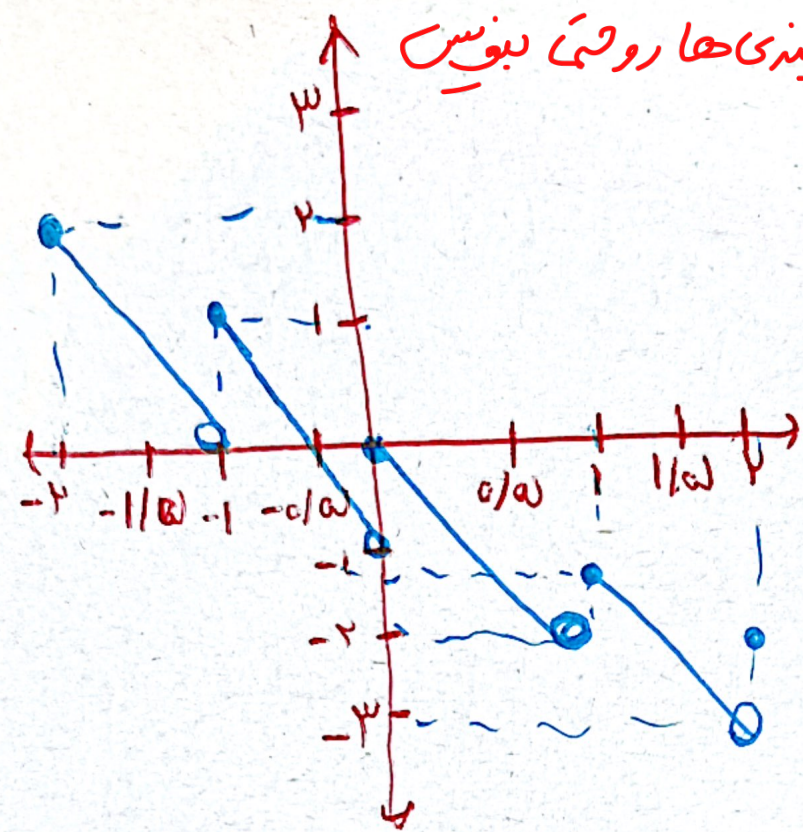
$$x^2 - 1 \Rightarrow x = 1 \Rightarrow y = 0 / x = 2 \Rightarrow y = 3 / x = 3 \Rightarrow y = 1$$

$$x < 0 \Rightarrow -x^2 + 1 \Rightarrow x = -1 \Rightarrow y = 0 / x = -2 \Rightarrow y = -3 / x = -3 \Rightarrow y = 1$$



مسئله ۱
کلاس اول

ضرایب بندی ها رو بنویس



مسئله ۲
کلاس اول

