

1- $x=1 \rightarrow f(x) + f(x) = x + f(x) \rightarrow f(x) = x$ فرض کنیم

$$\frac{f(2x+1)}{2x+1} + \frac{f(x+1)}{x+1} = 2x+1 = 2x+1 + x+1$$

$$\left. \begin{array}{l} f(x) = x \\ f(2x+1) = 2x+1 \\ f(x+1) = x+1 \end{array} \right\} \rightarrow f(x) = x$$

$$\sqrt{x-x^2} \quad x_{\max} = -\frac{b}{2a} = -\frac{1}{-2} = \frac{1}{2} \rightarrow y_{\max} = \frac{1}{2} - \frac{1}{4} = \frac{1}{4}$$

$$R_f = (-\infty, \frac{1}{4}] \rightarrow [0, \frac{1}{4}]$$

$$f(x) = \frac{x(x-1)(x+1)}{x+1} = x^2 - x \quad x = -1 \rightarrow y = 1 + 1 = 2$$

$$x = \frac{1}{2} = 1 \rightarrow y = -1 \quad [-1, +\infty) - \{1\}$$

$$x^2 - x = 1 \rightarrow x^2 - x - 1 = 0 \rightarrow (x-1)(x+1) = 0 \rightarrow x = 1 = b$$

$$\rightarrow x = -1 = a$$

$$c = 1 \rightarrow f\left(\frac{1}{2}\right) = f(1) = \frac{1}{2} = -1$$

$$y = \sqrt[3]{(x-1)^3} = \sqrt[3]{x^3 - 4x^2 + 4x - 1}$$

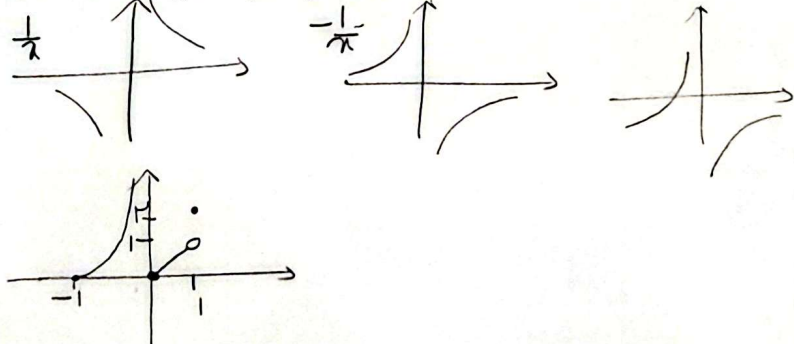
$$y = ax + b \text{ نرم}$$

$$y = x - 1 \quad -4 \leq x \leq 12 \rightarrow -1 \leq x - 1 \leq 10$$

$$\frac{x+1}{1-x} > 0 \Rightarrow \frac{+}{-} \rightarrow -1 < x < 1 \rightarrow -1 < R_f < 1$$

$$x^2 = 0 \rightarrow y = \frac{1}{b} \quad x^2 = +\infty \rightarrow y = a \quad \begin{array}{l} a=1 \\ b=1 \end{array} \cup \begin{array}{l} a=-1 \\ b=-1 \end{array} \rightarrow (-2)$$

می تواند x^2+1 صورت دارد بازه می شود



$$-1 \leq x < 0 \rightarrow y = \frac{1}{x} - 1$$

$$0 \leq x < 1 \rightarrow y = 0 + x = x$$

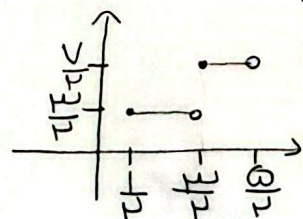
$$x = 1 \rightarrow y = \frac{1}{1} + \frac{1}{1} = 2$$

$$y = [x] + [x + \frac{1}{2}] + \frac{1}{2} - \frac{1}{2} = 2[x + \frac{1}{2}] - \frac{1}{2}$$

$$1 \leq x + \frac{1}{2} < \frac{3}{2}$$

$$1 \leq x + \frac{1}{2} < 2 \rightarrow y = 2 - \frac{1}{2} = \frac{3}{2}$$

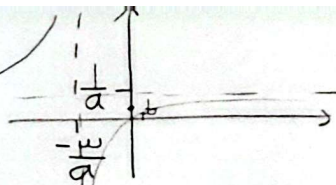
$$2 \leq x + \frac{1}{2} < 3 \rightarrow y = 4 - \frac{1}{2} = \frac{7}{2}$$



$$\frac{1}{a} = 1 \Rightarrow a = 1$$

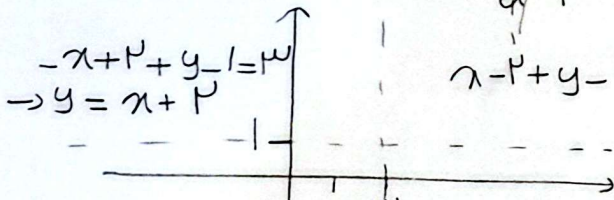
$$-\frac{3}{a} = b \Rightarrow b = -3 \rightarrow \textcircled{K}$$

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$$x-1+y-1=3 \Rightarrow y = -x+4$$

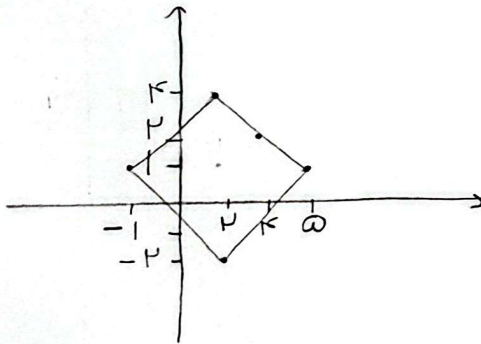
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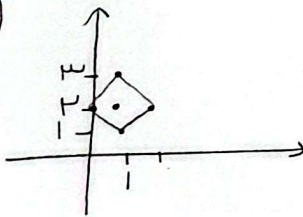
$$-x+1-y+1=3$$

$$y = -x$$

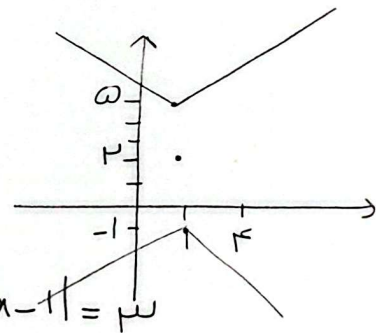
$$x-1-y+1=3 \Rightarrow y = x-4$$



الف)



ب)



$$|y-1| - |x-1| = 3$$

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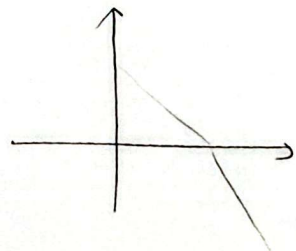
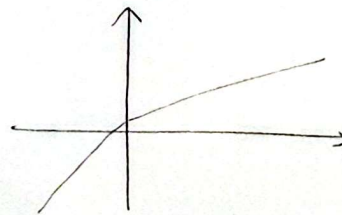
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$$3x - ax - b$$

$$= x(3-a) - b$$

$$-\frac{b}{a}$$

$$3x + ax + b = x(3+a) + b$$



هر دو سبب باید همیافت باشند و برای این صورت هر دو شرط درست است $+\infty$

$$(3-a)(3+a) > 0$$

$$-3 < a < 3$$

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