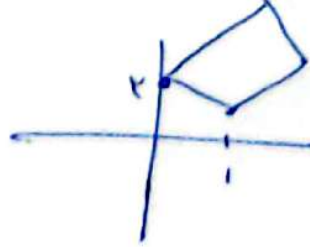


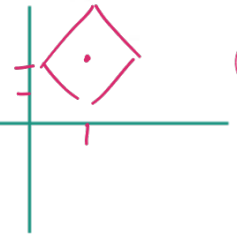
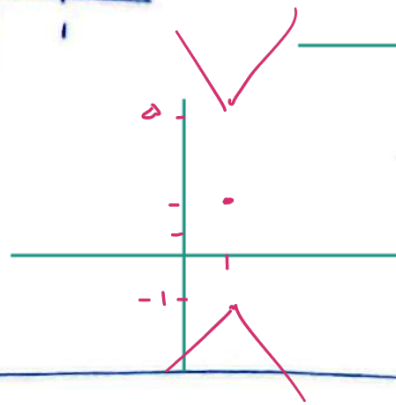
الف) $|x-1| + |y-2| = 1$

مرتب سفل بلس!



ب) $|x-1| - |y-2| = 3$

ب) $|x-1| - |y-2| = 3$



۱۵

۹

$$\left. \begin{aligned} x \geq -\frac{b}{a} &\rightarrow y = (r+a)x + b \\ x \leq -\frac{b}{a} &\rightarrow y = (r-a)x - b \end{aligned} \right\}$$



۱۵

$$-\frac{rb-ab}{a} + b = -\frac{rb+ab}{a} - b$$

$$\rightarrow \frac{rab}{a} = -rb$$

~~Handwritten scribbles~~

$$(r+a)(r-a) < 0$$

نسب دوضو باید هم

$$\rightarrow a^2 - 9 > 0$$

$$|a| > 3$$

علامت باره تا برد
یا

$$9 - a^2 > 0 \quad a^2 < 9 \quad -3 < a < 3$$

۱۵, ۲۵

$$x=1 \rightarrow f(x) = x + f(x) \rightarrow f(x) = x \rightarrow y=x$$

$$x \rightarrow ax + \frac{1}{x} + b = x + 1 \rightarrow a=1 \rightarrow b=0$$

$$y = \sqrt{x-x^2} \rightarrow R_f = [0, \frac{1}{2}]$$

$$y = \frac{x(x-r)(x+r)}{x+r} \rightarrow y = x^2 - rx \rightarrow D_f = \mathbb{R} - \{a, b\}$$

$$x^2 - rx = 1 \rightarrow \frac{r \pm 9}{2} = -r, f$$

$$a = -r \rightarrow b = f$$

$$f\left(\frac{-r \pm f}{-r}\right) = f(\pm 1)$$

$$f(-1) = r$$

$$y = \sqrt{(x-r)^2} \rightarrow (x-r)^2 = x^2 - 2rx + r^2 = 1$$

$$\rightarrow a = -2 \rightarrow b = 1$$

$$\rightarrow R_f = [-1, 1]$$

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

$$\rightarrow y = \frac{ax^r - 1}{x^r + b} \rightarrow -\frac{1}{b} = -1 \rightarrow b=1$$

$$\rightarrow a=1$$

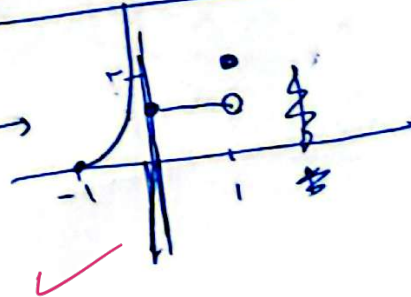
$$a+b < 1$$

$$a+b = 0$$

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

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

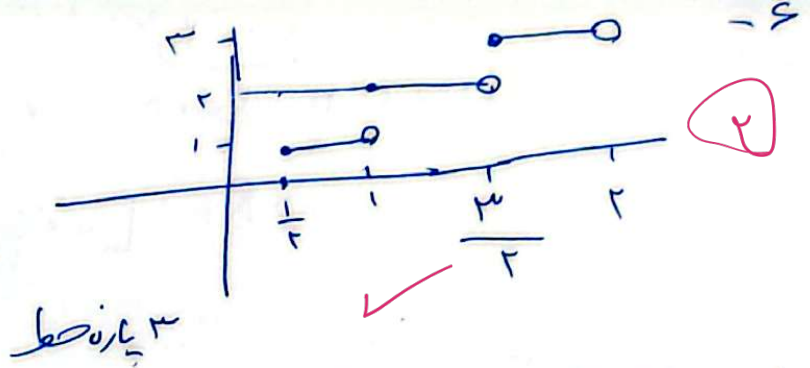
$$x=1 \rightarrow y=r$$



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

$$1 \leq x < \frac{r}{r} \rightarrow y = 2$$

$$\frac{r}{r} \leq x < r \rightarrow y = 3$$



$$|c| < |d| \quad (c-d)(c+d) < 0$$

$$\left| \frac{x+1}{ax+r} \right| < 1 \rightarrow -1 < \frac{x+1}{ax+r} < 1$$

(2) ✓

$$(ax+x+1)(x-ax-r) < 0 \rightarrow \text{if } a < 1 \quad (-r)(x+2) < 0$$

$$\frac{x+1}{ax+r} - 1 = \frac{x+1-ax-r}{ax+r} = \frac{(-a+1)x-r}{ax+r} < 0$$

$$x > -r$$

$$b < -r$$

$$\frac{x+1}{ax+r} + 1 > 0 \rightarrow \frac{(a+1)x+r}{ax+r} > 0$$

$$a-b < c$$

$$x=b \rightarrow \begin{cases} (a+1)b = -r \\ (-a+1)b = r \end{cases} \rightarrow \frac{a+1}{-a+1} = -r$$

$$\rightarrow a+1 = ra-r$$

$$\rightarrow a = r$$

$$\rightarrow b = -1$$

في هذه الحالة

$$a-b = r$$

$$|x-r| + |y-1| = r \rightarrow y > 1 \rightarrow y = -x + 9$$

(2) ✓

$$\begin{cases} y > 1 \\ x < r \end{cases} \rightarrow y = x + 2$$

$$\begin{cases} y < 1 \\ x > r \end{cases} \rightarrow y = x - 2$$

$$\begin{cases} y < 1 \\ x < r \end{cases} \rightarrow y = -x$$

