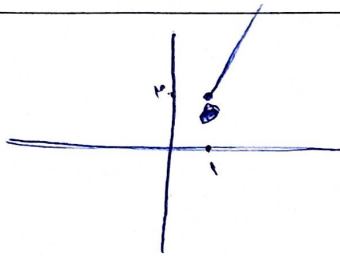
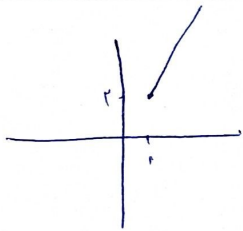


الف) $(3, 2), (m, 2) \Rightarrow m=3 \quad n^2 - n = 2 \Rightarrow n^2 - n - 2 = 0$
 $\Rightarrow n = \frac{-1 \pm \sqrt{1+8}}{2} \Rightarrow n = 2$ ۱

ب) $m=2 \rightarrow (a, 2-1) \Rightarrow a=-1 \Rightarrow (-1+2, n) \Rightarrow n=2$



$\Rightarrow x+a < 2 \Rightarrow 1+a \leq 2 \Rightarrow a \leq 1$
 $(-\infty, 1]$ ۲



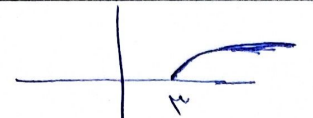
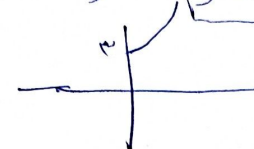
~~.....~~
 $ax + a - 1 < 2 \xrightarrow{x=0} a - 1 < 2 \Rightarrow a < 3$
~~.....~~ $a > 0 \Rightarrow 0 < a < 3$ $(0, 3)$ ۳

الف) $y_1 = y_2 \Rightarrow x_1^2 + 2 = x_2^2 + 2 \Rightarrow x_1 = x_2$
 $x^2 = y - 2 \Rightarrow x = \sqrt{y-2} \Rightarrow y = x^2 + 2$
۴

ب) $-\frac{6}{2a} = 2 \rightarrow y_{min} = -2$
۵

الف) $3x+1 = yx-2y \Rightarrow 2y+1 = yx-3x$
 $x(y-3) = 2y+1 \Rightarrow x = \frac{2y+1}{y-3}$
 $\rightarrow y = \frac{2x+1}{x-3}$
 یک به یک است ۵

ب) $y = \frac{2x+1}{x-3} = 2$
۵

$y = \sqrt{x-3}$  یک پیک است $x = \sqrt{y-3} \Rightarrow x^2 = y-3 \Rightarrow y = x^2-3$ $x \geq 0$ 	$-\frac{b}{2a} = 2 \quad y = -1$  یک پیک است $y = (x-2)^2 - 1 \Rightarrow x-2 = \pm \sqrt{y+1}$ $x = 2 \pm \sqrt{y+1} \Rightarrow y = 2 \pm \sqrt{x+1}$ $\left[\begin{matrix} 2 \\ 2+\infty \end{matrix} \right) \Rightarrow y \geq 2 + \sqrt{x+1}$
--	--

$$x + \sqrt{x} \xrightarrow{x=t} y = t^2 + t \Rightarrow t^2 + t - y = 0 \xrightarrow{\Delta} 1 + 4y$$

$$t = \frac{-1 \pm \sqrt{1+4y}}{2}$$

$$x = t^2 = \frac{1 + 1 + 4y - 2\sqrt{1+4y}}{4} = y + \frac{\sqrt{1+4y}}{2}$$

$$y = x + \frac{\sqrt{1+4y}}{2} + \frac{1}{2} \xrightarrow{ax+b-\sqrt{x-c}} \begin{cases} a=1 \\ b=\frac{1}{2} \\ c=-\frac{1}{2} \end{cases} \Rightarrow a+2b+c = 1+1-1=1$$

$$y_1 = y_2 \Rightarrow \frac{x_1^2}{x_1^2-2} = \frac{x_2^2}{x_2^2-2} \Rightarrow x_1^2 x_2^2 - 2x_2^2 = x_1^2 x_2^2 - 2x_1^2$$

$$\Rightarrow x_1^2 = x_2^2 \Rightarrow x_1 = \pm x_2$$

$$y = \frac{x}{\sqrt{x^2-2}} \rightarrow x = \frac{y}{\sqrt{y^2-2}} \xrightarrow{2 \text{ e } 1/2} x^2 = \frac{y^2}{y^2-2}$$

$$y x^2 - 2x^2 = y^2 \Rightarrow y x^2 - y^2 = 2x^2 \Rightarrow y^2 = \frac{2x^2}{x^2-1} \Rightarrow y = \pm \sqrt{\frac{2x^2}{x^2-1}}$$

$$x + x|y| = y \Rightarrow x = y(1-|x|) \Rightarrow y = \frac{x}{1-|x|} = \frac{-2}{1-\frac{x}{0}} = \frac{-2}{1-\frac{x}{0}}$$

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

$$\rightarrow \left(\frac{-y}{0} + 1 \right)^2 = \frac{9}{10}$$

$$\frac{9}{10} - \frac{y}{4} = \frac{25}{10} - \frac{0}{10} = \frac{-25}{10}$$

$$x = \sqrt[3]{y-1} \Rightarrow x^3 = y-1 \Rightarrow y = x^3+1$$

$$12 = x^3 + 1 + \sqrt{x^3+1} \xrightarrow{x=2} 9 + \sqrt{9} = 12$$

$$(x, 12) \rightarrow (2, 12)$$