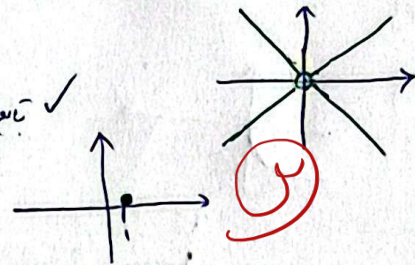


$$a^2 + 3 \leq 4a \rightarrow a^2 - 4a + 3 \leq 0 \rightarrow (a-1)(a-3) \leq 0 \rightarrow \boxed{a=1} \quad \boxed{a=3}$$

۱. از این $a=1$ و $a=3$

۲. به تبعیت از $y^2 - 2x \leq 2$ و $y^2 \leq 2x$ $\xrightarrow{x \leq 2}$ $|y| \leq |x| \rightarrow y = \pm |x|$ (الف)

ب) جمع در عبارت منفی $|y| \leq 0 \rightarrow y \leq 0$
صفر شود پس هر دو طرف $\sqrt{x-1} \leq 0 \rightarrow x \leq 1$ به تبعیت ✓



۳. (الف) $\xrightarrow{x \leq 2} |y-1| = 1 \rightarrow y-1 \leq 1 \rightarrow \boxed{y \leq 2}$
 $\rightarrow y-1 \geq -1 \rightarrow \boxed{y \geq 0}$ به تبعیت $\{0, 2\}$ ✓

ب) $\xrightarrow{x \leq 2} y(y^2-1) \leq 0 \rightarrow y \leq -1$ و $y \leq 1$ و $y \geq 0$ و $y \geq 2$ ✓

ج) $\xrightarrow{x \leq 0} \cos^2 \frac{y}{2} \leq 1 \rightarrow \cos \frac{y}{2} \leq 1 \rightarrow y \leq 0$ و 2π ✓ $(\frac{\pi}{2} \leq 0 \leq \pi)$

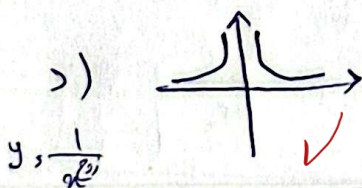
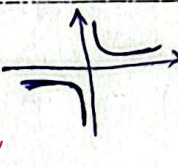
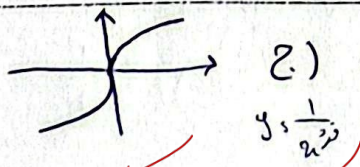
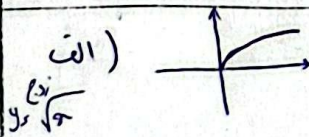
د) $\xrightarrow{x \leq 0} 0 \leq 0 \rightarrow y \in \mathbb{R}$ ✓ $[0], [\frac{\pi}{2}], [\pi], \dots$

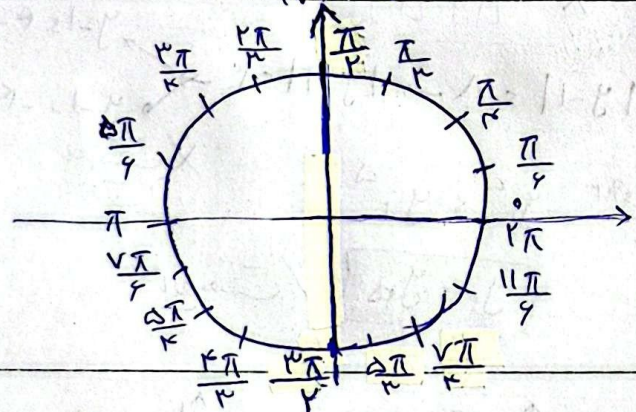
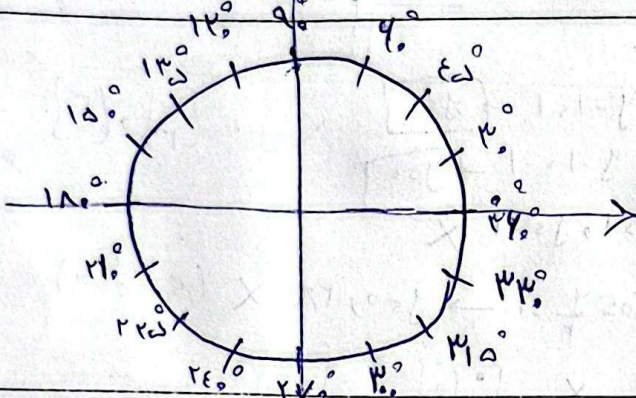
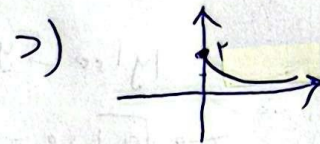
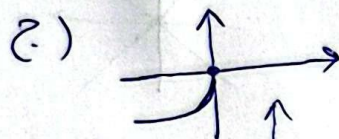
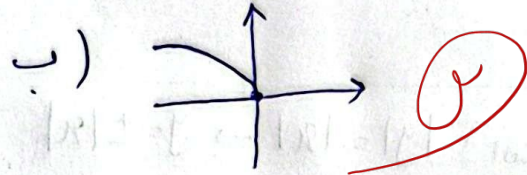
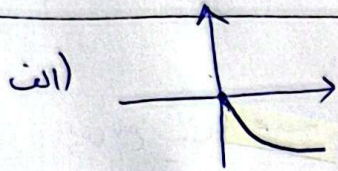
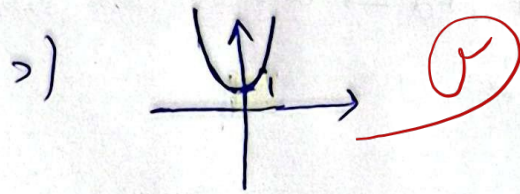
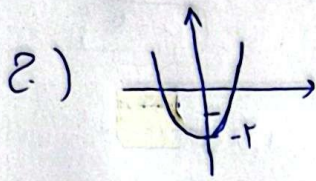
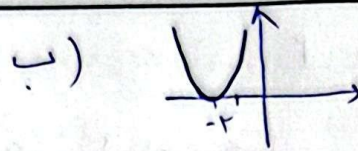
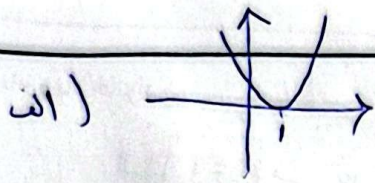
۴. (الف) $\xrightarrow{x \leq 4} 4 + |y-1| \leq 8 \rightarrow |y-1| \leq 4 \rightarrow y-1 \leq 4 \rightarrow \boxed{y \leq 5}$
 $y-1 \geq -4 \rightarrow \boxed{y \geq -3}$ به تبعیت ✓

ب) $y_1^2 = -2x_1 + 6 \xrightarrow{x_1 \leq 2} y_1^2 \leq y_2^2$

ب) $y_2^2 = -2x_2 + 6$ به تبعیت ریاضی ✓

$\boxed{y_1 \leq y_2}$ به تبعیت ✓





الف) $= -\frac{1}{\sqrt{2}}$ ب) $= \frac{1}{\sqrt{2}}$

ج) $= \frac{1}{\sqrt{2}}$

د) $= -\frac{1}{\sqrt{2}}$

$\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} \cos \\ \sin \end{bmatrix}$

$135^\circ = \left[\frac{1}{\sqrt{2}} \right] / 135^\circ = \left[-\frac{1}{\sqrt{2}} \right]$

$\frac{5\pi}{4} = 225^\circ = \left[\frac{1}{\sqrt{2}} \right]$

$\frac{11\pi}{4} = 330^\circ = \left[-\frac{1}{\sqrt{2}} \right]$