

$$f = \{(1, 2a), (1, a^2 + 3), (2, 2a)\}$$

$$2a = a^2 + 3$$

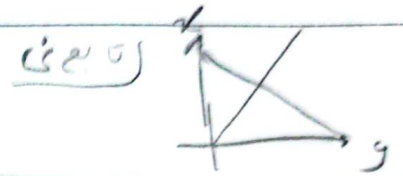
$$a^2 - 2a + 3 = 0$$

$$a(2-a) = 3$$

$$a = 3 \text{ و } 1$$

$$الف) |y| = |x|$$

$$y \leq x \text{ و } y \geq -x$$



ب) $|y| + \sqrt{x-1} = 0 \rightarrow -\sqrt{x-1} = |y|$ تابع هست $y = 0, x = 1$
بسیار $x-1 \geq 0 \Rightarrow x \geq 1$

الف) $|y-1| = \sqrt{x-2}$ $x = 2 \rightarrow |y-1| = \sqrt{2-2} = 0 \rightarrow |y-1| = 0$

$y-1 = 1$ و $y-1 = -1 \rightarrow y = 2$ و $y = 0$ تابع هست

ب) $y^2 - y = \frac{x}{2}$ $x = 0 \rightarrow y^2 - y = 0 \rightarrow y(y-1) = 0 \rightarrow y = 0$ و $y = 1$

$\rightarrow y(y-1)(y+1)(y+1) = 0 \rightarrow y = 0$ و 1 و -1 تابع هست

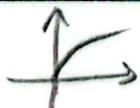
تابع هست $y = \frac{1}{x}$ و $y = -\frac{1}{x}$ $x(2y-1) = 0 \rightarrow x = 0$ و $y = \frac{1}{2}$

الف) $x^2 + |y-1| = 4x$ $y = -1 + 4 + 1 = 4$ و $y = 1 - 4 + 1 = -2$

$|y-1| = 4x - x^2 \rightarrow y = x^2 - 4x + 1$ و $y = -x^2 + 4x - 1$ تابع هست

ب) $y^2 + 2x = 0 \rightarrow y^2 = -2x \rightarrow y = \sqrt{-2x}$ و $y = -\sqrt{-2x}$ تابع هست $y = \sqrt{-2x}$
بسیار $x = 9 \rightarrow y = -3(9) = -27$
بسیار $x = 0 \rightarrow y = 0$ و $y = 9$

الف) $y = \sqrt{x}$



ب) $y = \sqrt{x}$



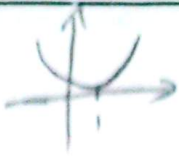
الف) $y = \frac{1}{x^3}$



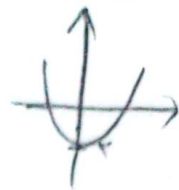
ب) $y = \frac{1}{x^4}$



الف) $y = (x-1)^2$



ب) $y = x^2 - 2$



ج) $y = (x+2)^2$



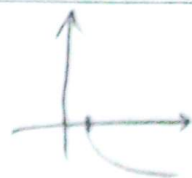
د) $y = x^2 + 1$



الف) $y = -\sqrt{x}$



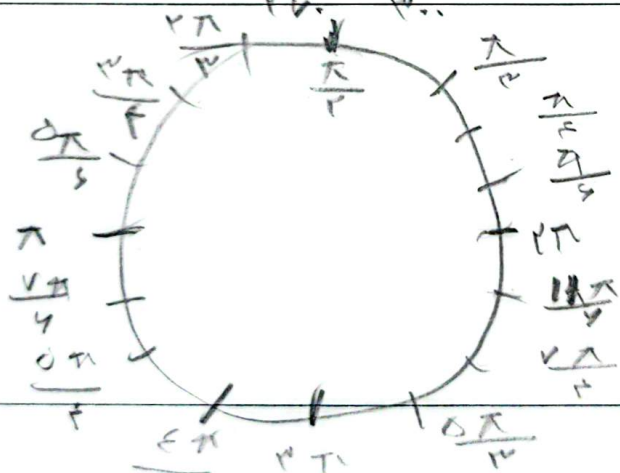
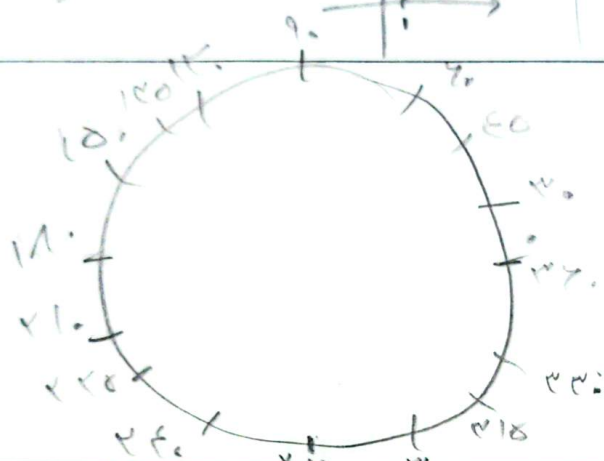
ب) $y = \sqrt{-x}$



ج) $y = \sqrt{x}$



د) $y = -\sqrt{x} + 2$



الف) $\cos 110^\circ = -\frac{1}{2}$

ب) $\sin 10^\circ = \frac{1}{2}$

ج) $\cos \frac{5\pi}{6} = -\frac{1}{2}$

د) $\sin \frac{11\pi}{6} = -\frac{1}{2}$