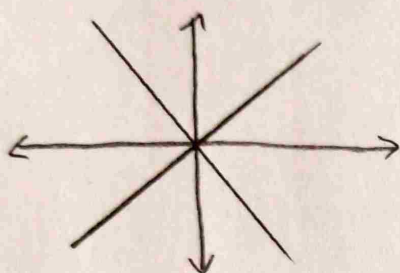


$$f = \{ (1, 4a), (1, a^2+3), (2, 3a) \}$$

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

الف) $|y| = |x| \rightarrow y = \pm x$



تابع نیست

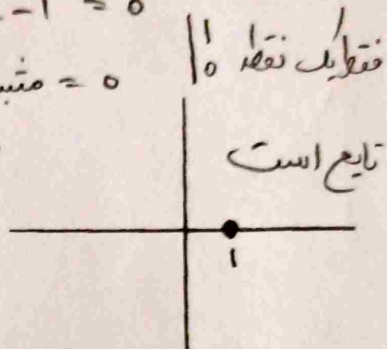
ب) $|y| + \sqrt{x-1} = 0$

$0 + 0 = 0$ مثبت + مثبت = 0

$|y| = 0 \rightarrow y = 0$

$\sqrt{x-1} = 0$

$x = 1$



تابع است

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

$y-1 = \pm 0 \rightarrow y = 1$

ب) $y^5 - y = \frac{x^2}{2} \xrightarrow{x=0} y(y^4 - 1) = 0$

$y = 0 \quad y = \pm 1$

ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1 \xrightarrow{x=90^\circ}$

$1 + \cos^2 \frac{y}{2} = 1 \rightarrow \cos^2 \frac{y}{2} = 0$

$\cos^2 y = 0 \rightarrow y = 90^\circ, 270^\circ$

$\rightarrow 2xy = x \xrightarrow{x=0} y = \mathbb{R}$

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الف) $x^2 + |y-1| = 4x \xrightarrow{x=1} |y-1| = 3 \rightarrow y-1 = \pm 3 \rightarrow y = 4 \quad y = -2$

تابع نیست

ب) $y^5 + 3x = 0 \xrightarrow{x=-1} y^5 = -3 \rightarrow y = \sqrt[5]{-3}$

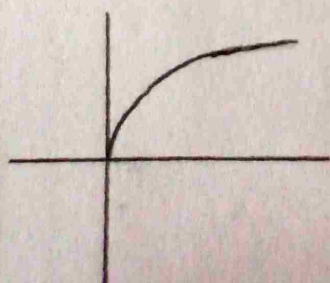
$\xrightarrow{x=0} y^5 = 0$

$\xrightarrow{x=-1} y^5 = 3$

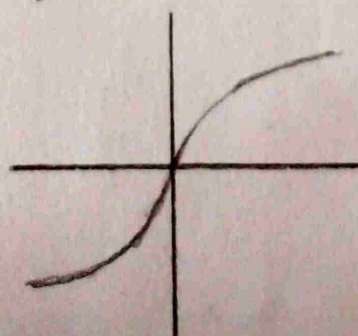
$y = \sqrt[5]{3}$ تابع هست

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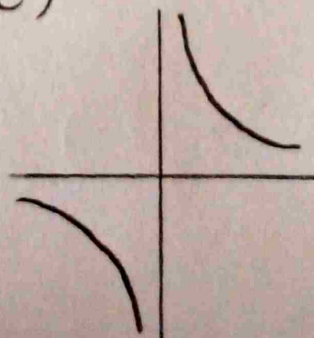
الف)



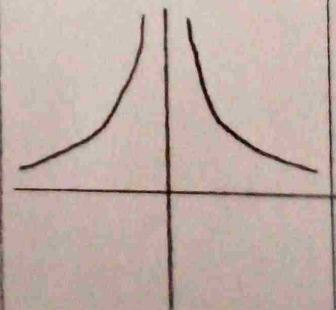
ب)



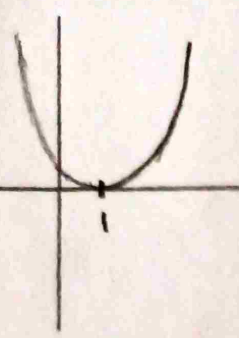
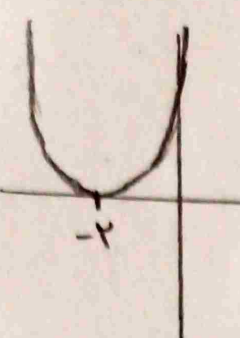
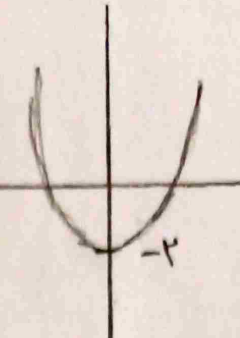
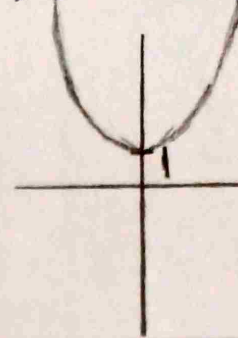
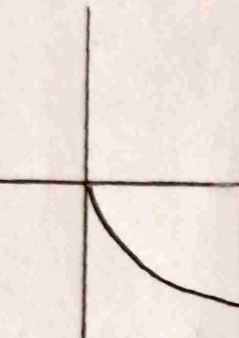
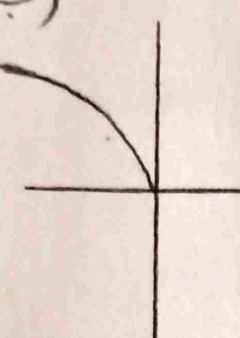
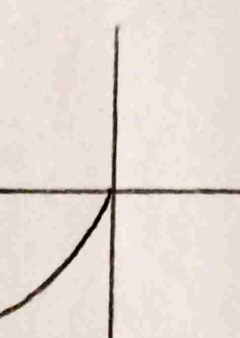
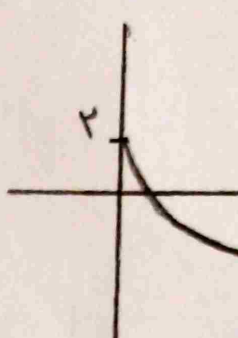
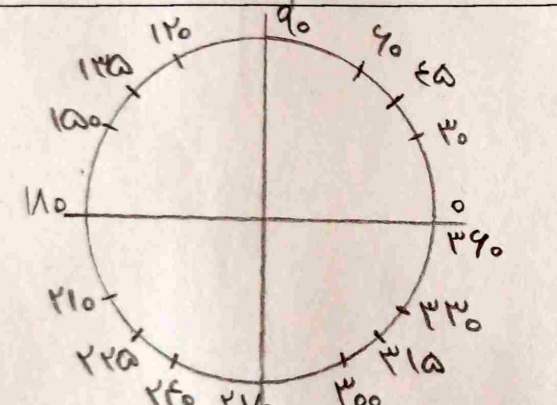
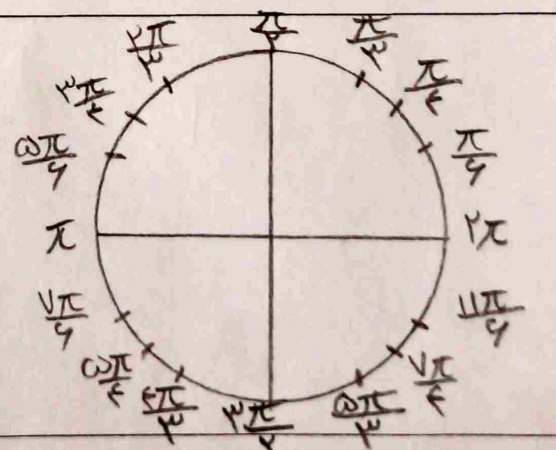
ج)



د)



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الف) 	ب) 	ج) 	د) 	٦
الف) 	ب) 	ج) 	د) 	٧
				٨
				٩
الف) $\cos 120^\circ = -\frac{1}{2}$ ب) $\sin 150^\circ = \frac{1}{2}$ ج) $\cos \frac{5\pi}{3} = \frac{1}{2}$ د) $\sin \frac{11\pi}{9} = -\frac{1}{2}$				١٠