

$$f = \{ (1, \xi a), (1, a^Y + c), (Y, \nu a) \} \Rightarrow \xi a = a^Y + c \Rightarrow 0 = a^Y - (\xi a + c) = (a - \nu)(\nu a)$$

$\downarrow$
 $a = \nu$
 $\nu, 1$

1

$$|x| = |y| \text{ (التباعد)}$$

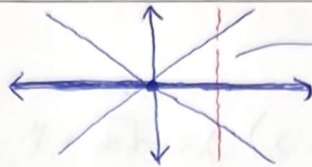
$$x \rightarrow 1 \Rightarrow y \rightarrow -1, 1$$

$$x \rightarrow Y \Rightarrow y = -Y, Y$$

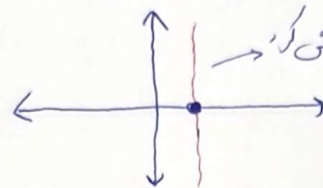
ب) $|y| + \sqrt{x-1} = 0$

نامتی $\rightarrow$ $\downarrow$
 $\downarrow$
 $x=1$

$\downarrow$
 $y=0$



X تابعیت $\rightarrow$ ۲ بار قطع کرد



✓ تابع است

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الق) $|y-1| = \sqrt{x-2} \rightarrow$ if $x=4 \Rightarrow |y-1|=2 \rightarrow \begin{cases} y-1=2 \Rightarrow y=3 \\ y-1=-2 \Rightarrow y=-1 \end{cases} \Rightarrow \begin{matrix} 4 & 4 \\ 3 & -1 \end{matrix} \times$
 ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ١٠ ١١ ١٢ ١٣ ١٤ ١٥ ١٦ ١٧ ١٨ ١٩ ٢٠ ٢١ ٢٢ ٢٣ ٢٤ ٢٥ ٢٦ ٢٧ ٢٨ ٢٩ ٣٠ ٣١ ٣٢ ٣٣ ٣٤ ٣٥ ٣٦ ٣٧ ٣٨ ٣٩ ٤٠ ٤١ ٤٢ ٤٣ ٤٤ ٤٥ ٤٦ ٤٧ ٤٨ ٤٩ ٥٠ ٥١ ٥٢ ٥٣ ٥٤ ٥٥ ٥٦ ٥٧ ٥٨ ٥٩ ٦٠ ٦١ ٦٢ ٦٣ ٦٤ ٦٥ ٦٦ ٦٧ ٦٨ ٦٩ ٧٠ ٧١ ٧٢ ٧٣ ٧٤ ٧٥ ٧٦ ٧٧ ٧٨ ٧٩ ٨٠ ٨١ ٨٢ ٨٣ ٨٤ ٨٥ ٨٦ ٨٧ ٨٨ ٨٩ ٩٠ ٩١ ٩٢ ٩٣ ٩٤ ٩٥ ٩٦ ٩٧ ٩٨ ٩٩ ١٠٠

ب) $y^a - y = \frac{x^r}{r} \rightarrow$ if $x=0 \Rightarrow y^a - y = 0 \rightarrow y=0, 1 \Rightarrow |0, 1|$ تابع نیست

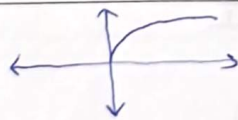
2.) $\sin^2 \frac{y}{r} + \cos^2 \frac{y}{r} = 1 \rightarrow \text{if } x=0 \Rightarrow 0 + \cos^2 \frac{y}{r} = 1 \Rightarrow \cos \frac{y}{r} = \pm 1 \Rightarrow \frac{y}{r} = 0 \text{ or } \frac{y}{r} = \pi \Rightarrow y=0 \text{ or } y=\pi r$

2) $\exists x y = x \rightarrow$ if $x=0 \Rightarrow y=\mathbb{R} \rightarrow$ ~~كامل~~

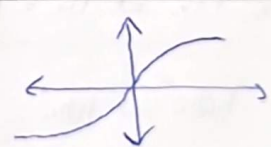
الف) $x^2 + |y-1| = f(x) \rightarrow$ if $x=1 \Rightarrow |y-1| = 3 \begin{cases} y-1=3 \Rightarrow y=4 \\ y-1=-3 \Rightarrow y=-2 \end{cases} \Rightarrow \begin{vmatrix} 1 & 4 \\ 1 & -2 \end{vmatrix} \neq 0$ تامین

$$\therefore) y^a + r x = 0 \quad \begin{cases} r x_1 = -y_1^a \\ r x_r = -y_r^a \end{cases} \Rightarrow \text{if } (x_1 = x_r) \Rightarrow -y_1^a = -y_r^a \Rightarrow y_1^a = y_r^a$$

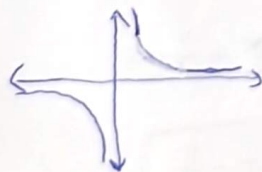
الف) $y = \sqrt[4]{x}$



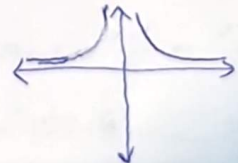
b) $y = \sqrt[n]{x}$



7.) $y = \frac{1}{x^2}$

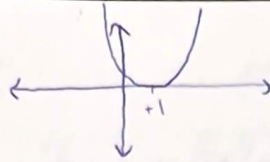


$$2) y = \frac{1}{n^k}$$

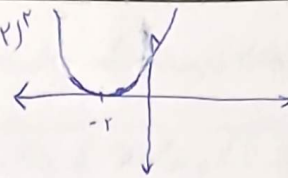


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الف) $y = (x-1)^2$

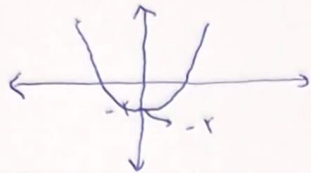


ب) $y = (x+1)^2$

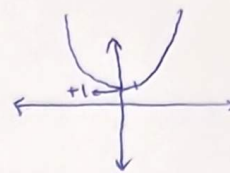


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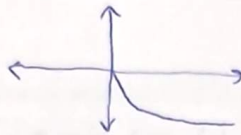
ج) $y = x^2 - 2$



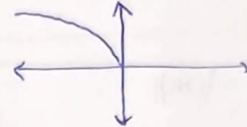
د) $y = x^2 + 1$



الف) $y = -\sqrt{x}$

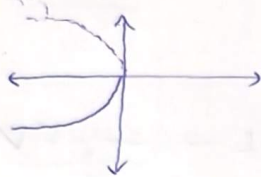


ب) $y = \sqrt{-x}$

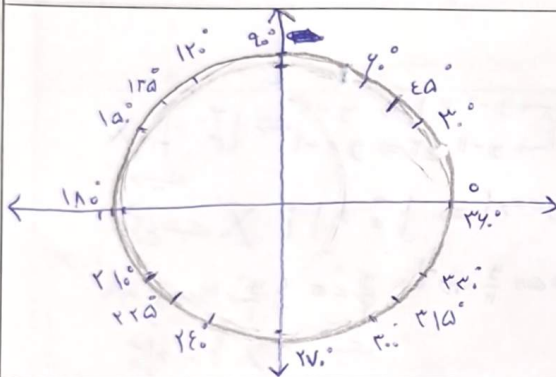
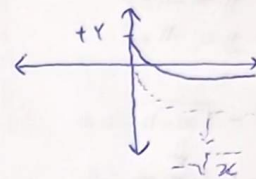


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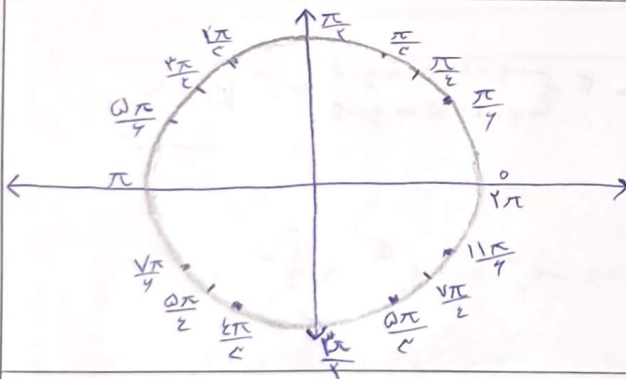
ج) $y = -\sqrt{-x}$



د) $y = -\sqrt{x} + 2$



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الف) $\cos 120^\circ \Rightarrow 120^\circ = \left| \begin{matrix} \frac{1}{r} \rightarrow \cos \\ \frac{\sqrt{3}}{r} \rightarrow \sin \end{matrix} \right| \rightarrow \cos 120^\circ = -\frac{1}{r}$

ب) $\sin 150^\circ \Rightarrow 150^\circ = \left| \begin{matrix} \frac{\sqrt{3}}{r} \rightarrow \sin \\ \frac{1}{r} \rightarrow \cos \end{matrix} \right| \rightarrow \sin 150^\circ = \frac{1}{r}$

ج) $\cos \frac{5\pi}{4} \rightarrow \frac{1 \cdot \pi}{4} \rightarrow 1 \times 90^\circ = 90^\circ \rightarrow \left| \begin{matrix} \frac{1}{r} \rightarrow \cos \\ \frac{\sqrt{2}}{r} \rightarrow \sin \end{matrix} \right| \rightarrow \cos \frac{5\pi}{4} = -\frac{1}{r}$

د) $\sin \frac{11\pi}{4} \rightarrow 11 \times \frac{\pi}{4} = 2\pi + \frac{3\pi}{4} \rightarrow \left| \begin{matrix} \frac{\sqrt{2}}{r} \rightarrow \sin \\ \frac{1}{r} \rightarrow \cos \end{matrix} \right| \rightarrow \sin \frac{11\pi}{4} = \frac{\sqrt{2}}{r}$

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