

الف: تابع هست	$y^3 - x = 2x^2$ برای هر x فقط یک y وجود دارد $y^3 = 2x^2 + x$	$ x + x^2 = x + 3$ $= x + x + 3 - x^2$ $\Rightarrow y = \pm(x + 3 - x^2) \Rightarrow$ تابع نیست
ب: تابع هست	$\sqrt{x-2} + y-2 = 0$ $\Rightarrow \sqrt{x-2} = y-2 = 0$ $\Rightarrow x = 2 \text{ و } y = 2$	$x = \cos y$ $\Rightarrow \cos y = 0 \Rightarrow y = 90^\circ \text{ و } y = 270^\circ$ $\Rightarrow$ تابع نیست
الف: تابع هست	$y = 1$	$y = 2x$
الف: تابع همانند	$y = ax + b$ $\Rightarrow a = 1 \text{ و } b = 0$ $\Rightarrow a + 2b = 1 + 0 = 1$	$y = x^2 + ax + b \rightarrow \omega = (2, 1)$ $\Rightarrow x_5 = -\frac{a}{1} = 2 \Rightarrow a = -2$ $1 = 2^2 + (-2 \times 2) + b \Rightarrow b = 0$ $\Rightarrow a + 2b = -2 + (2 \times 0) = -2$
الف: تابع هست	$y = 2x + 1$	$y = x^0$
الف: تابع هست	$y = 2x + 1$	$y = x^2$
الف: تابع هست	$y = x-2 + 3$	$y = - x+3 + 1$

$$y = \frac{x+1}{x^2-1x+1} \rightarrow \Delta = 1^2 - (1 \times 1) = 0$$

$$\Rightarrow \Delta < 0 \Rightarrow D_f = \mathbb{R}$$

$$y = \frac{x+1}{x^2-1x} \quad x^2-1x = x(x-1)$$

$$\Rightarrow x \neq 0 \quad x \neq 1 \Rightarrow D_f = \mathbb{R} - \{0, 1\}$$

$$y = \frac{x+1}{x^2-1x^2} \quad x^2-1x^2 = x^2(x^2-1) = 0$$

$$\Rightarrow x \neq \pm 1 \quad x \neq 0$$

$$\Rightarrow D_f = \mathbb{R} - \{-1, 0, 1\}$$

$$y = \frac{x+1}{x^2+x+1} \rightarrow \Delta = 1 - 1 = 0$$

$$\Rightarrow \Delta < 0 \Rightarrow D_f = \mathbb{R}$$

$$y = \frac{1x+1}{x^2+1} \quad x^2+1 \rightarrow \text{مربعی شود}$$

$$\Rightarrow D_f = \mathbb{R}$$

$$y = \sqrt{4-x} + \sqrt{x-2} \Rightarrow x \leq 4$$

$$x \geq 2$$

$$\Rightarrow D_f = [2, 4]$$

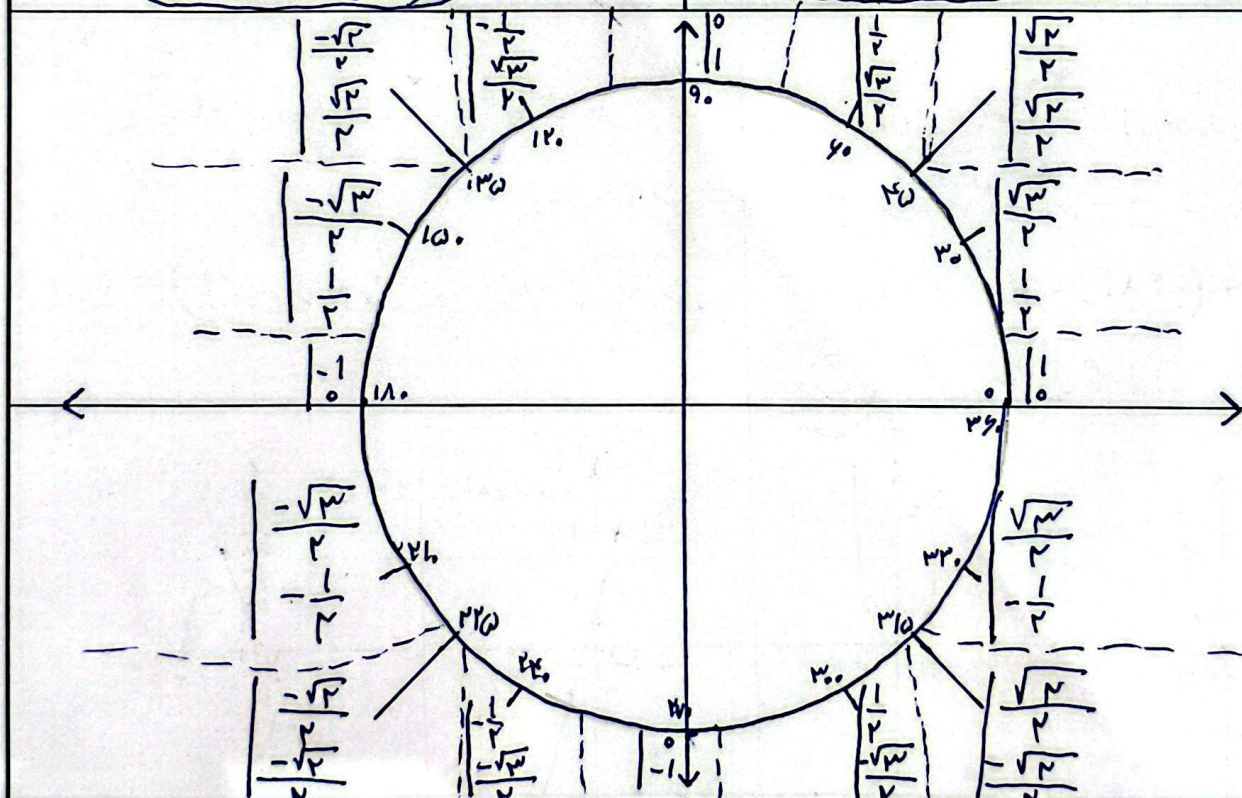
$$y = \frac{1x+1}{|x|+x^2} \quad |x|+x^2 \neq 0 \Rightarrow x \neq 0$$

$$\Rightarrow D_f = \mathbb{R} - \{0\}$$

$$y = \frac{\sqrt{x-1}}{x-1} \quad x \geq 1$$

$$x \neq 1$$

$$\Rightarrow D_f = [1, 1) \cup (1, +\infty) = [1, +\infty) - \{1\}$$



$$\cos \frac{11\pi}{4} = \frac{\sqrt{2}}{2} \rightarrow \frac{\sqrt{2}}{2}$$

$$\sin -\frac{\sqrt{2}}{2} = \frac{\pi\pi}{\pi} \quad \frac{5\pi}{\pi}$$

$$= \left\{ 2k\pi - \frac{\pi}{2}, 2k\pi - \frac{\pi}{2} \right\}$$

$$\cos \frac{2\pi}{3} = -\frac{1}{2} \rightarrow \frac{1}{2}$$

$$\sin \frac{1}{2} = \frac{\pi}{2} \quad \frac{5\pi}{2}$$

$$= \left\{ 2k\pi + \frac{\pi}{2}, 2k\pi + \frac{5\pi}{2} \right\}$$