

1f, vB

(۱) $\frac{x^2 - 9x}{x^2 - x} \geq 0$ $\frac{x(x-9)}{x(x-1)} \geq 0$ $\frac{x(x-1)(x+1)}{x(x-1)(x+1)} \geq 0$ $\frac{-1 \ 0 \ 1 \ 9}{- \quad + \quad - \quad +}$ $x \neq \sqrt{x}$ $D_f = (-1, 0) \cup (0, 1) \cup [9, +\infty)$

(۲) $\frac{x^2 - x}{x^2 - x} \geq 0$ $\frac{x(x-1)}{x(x-1)} \geq 0$ $\frac{-1 \ 0 \ 1}{- \quad + \quad -}$ $x \neq \sqrt{x}$ $D_f = \{R - \{ -1, 0, 1 \} \}$

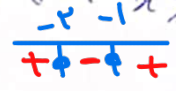
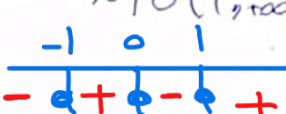
(۱) $x + |x| \geq 0$ $x > |x|$ if $x > 0 \rightarrow x > 0 \rightarrow x > 0$ $x < |x|$ if $x < 0 \rightarrow x = 0 \propto$ $D_f = (0, +\infty)$ (۱)

(۲) $x + |x| \geq 0$ $|x| > 0$ $x > 0$ $(0, +\infty)$

(۱) $x - [x] \geq 0$ $x > [x]$ $(-\infty, 1)$ (۲) $x - [x] \geq 0$ $x \geq [x]$ $(-\infty, 1)$ (۳) $x - [x] \geq 0$ $x \geq [x]$ $(-\infty, 1)$ (۴) $x - [x] \geq 0$ $x \geq [x]$ $(-\infty, 1)$ (۵) $x - [x] \geq 0$ $x \geq [x]$ $(-\infty, 1)$

(۱) $[x - \frac{1}{x}] + [x + \frac{1}{x}] \geq 0$ $[x] + [-x] \in \mathbb{Z}$ $x - \frac{1}{x} \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{x}$ $D_f = \{x | x = k + \frac{1}{x}, k \in \mathbb{Z}\}$ (۲) $[x - \frac{1}{x}] + [x + \frac{1}{x}] \geq 0$ $[x + \frac{1}{x}] = [x - \frac{1}{x}] + 1$ $x(x - \frac{1}{x}) + 1 \geq 0$ $[x - \frac{1}{x}] \geq 0$ $x - \frac{1}{x} \geq 0$ $x \geq \frac{1}{x}$

(۱) $\sin^2 x - 1 \neq 0$ $R = \{ \frac{k\pi}{2}, \frac{\pi}{2} \}$ $\sin^2 x \neq 1$ $\sin^2 x \neq \frac{1}{4}$ $\sin x \neq \pm \frac{\sqrt{2}}{2}$ (۲) $\sin x - 1 \neq 0$ $\sin x \neq 1$ $R = \{ \frac{\pi}{2} + 2k\pi \}$ (۳) $\sin x - 1 \neq 0$ $\sin x \neq 1$ $R = \{ \frac{\pi}{2} + 2k\pi \}$

$\{2k\pi\}$	$\cos x - 1 \geq 0$ $\cos x \geq 1$ 	$25; 17x - 1 \geq 0$ (الف) $2; 12x \geq \frac{1}{2}$ $\left[\frac{\pi}{6} + 2k\pi, \frac{5\pi}{6} + 2k\pi \right]$ <u>1, 7, 5</u> باید بازه بندی	6
$x^2 + 3x + 1 \geq -1$ $x^2 + 3x + 2 \geq 0$ $(x+1)(x+2) \geq 0$ $x \leq -2$ or $x \geq -1$ 	$x^2 + 3x + 1 \leq 1$ $x^2 + 3x \leq 0$ $x(x+3) \leq 0$ $-3 \leq x \leq 0$ $[-3, -2] \cup [-1, 0]$ 	$-1 \leq x - 3 \leq 1$ $2 \leq x \leq 4$ $\pm 2 \leq x \leq \pm 4$ $[-4, -2] \cup [2, 4]$ <u>1, 7, 5</u>	7
$x(x^2 - 1) > 0$ $x(x-1)(x+1) > 0$ $x = 0$ $x = 1$ $x = -1$ $(-1, 0) \cup (1, +\infty)$ 	$x^2 - x > 0$ $x = 0$ $x = 1$ $x = -1$ جدول تغییر علامت <u>1, 7, 5</u>	$x - 2 > 0$ $x > 2$ $y = \log_{10}(x-2) \leq 2$ $x - 2 \leq 100$ $x \leq 102$ $(2, 102]$	8
1) $5^x + 1 \neq 0$ $5^x \neq -1$ $\log_5^{-1} = x$ $D_y = \mathbb{R}$ 2) $5^x - 1 \neq 0$ $5^x \neq 1$ $x \neq 0$ $\mathbb{R} - \{0\}$ 3) $5^x - 2 \neq 0$ $5^x \neq 2$ $\log_5 2 = x \rightarrow D_y = \mathbb{R} - \{\log_5 2\}$ 4) $5^x - 3 \neq 0$ $5^x \neq 3$ $\log_5 3 = x$ $D_y = \mathbb{R} - \{\log_5 3\}$	<u>1, 5</u>		9
$\frac{3x-2}{x-4} = w$ $3x-2 = w(x-4)$ $3x-2 = wx-4w$ $x(3-w) = 4-w$ $x = \frac{4-w}{3-w}$ $\left\{ \frac{4-w}{3-w} \mid w \in W \right\}$	$3x-4 \neq 0$ $x \neq \frac{4}{3}$ <u>5</u> ✓	$5x+1=w$ $5x=w-1$ $x = \frac{w-1}{5}$ $\left\{ \frac{w-1}{5} \mid w \in W \right\}$	10