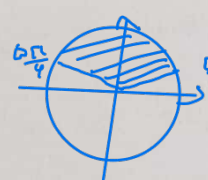
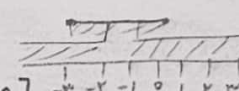
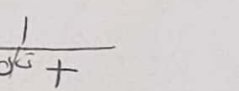


الف) $\frac{x(x-6)}{x(x^2-1)} \geq 0$ $\frac{-1 \quad * \quad 1 \quad 6}{- \quad + \quad + \quad - \quad +}$ $D_f = (-1, 0) \cup (0, 1) \cup [6, +\infty)$ (۲) ✓	ب) $\frac{x^3(x^2-1)}{x(x^2-1)} \geq 0$ $\frac{-1 \quad * \quad 1}{+ \quad + \quad +}$ $D_f = \mathbb{R} - \{-1, 0, 1\}$ ۱۹, ۸
الف) $x + x > 0$ $\frac{0}{- \quad +}$ $D_f = \mathbb{R}^+ \cup D_f = (0, +\infty)$ (۲) ✓	ب) $x x > 0$ $\frac{0}{- \quad +}$ $D_f = \mathbb{R}^+ \cup D_f = (0, +\infty)$ ۲
الف) $2 - [x] \geq 0$ $[x] \leq 2$ $D_f = (-\infty, 3)$ (۲) ✓	ب) $2 - [x] > 0$ $[x] < 2$ $D_f = (-\infty, 2)$ ۳
الف) $[x - \frac{1}{3}] + [x + \frac{2}{3}] \geq 0 + 1$ $\Rightarrow [x + \frac{2}{3}] \geq 1$ $[x + \frac{2}{3}] \geq \frac{1}{3}$ $x \geq \frac{1}{3}$ $D_f = [\frac{1}{3}, +\infty)$ (۲) ✓	ب) $[x - \frac{1}{3}] + [-x + \frac{1}{3}] \geq 0$ $\Leftrightarrow [-(x - \frac{1}{3})] + [x - \frac{1}{3}] \geq 0$ $[x] + [-x] \geq 0$ طبقه نمودار: $\Rightarrow x - \frac{1}{3} \in \mathbb{Z} \Rightarrow x \in \mathbb{Z} + \frac{1}{3}$ $D_f = \{x \mid x = k + \frac{1}{3}, k \in \mathbb{Z}\}$ ۴
الف) $\sin x - 1 \neq 0$ $\sin x \neq 1$ $D_f = \mathbb{R} - \{2k\pi + \frac{\pi}{2}\}$ (۲) ✓	ب) $1 - \sin^2 x \neq 0$ $\sin^2 x \neq 1$ $\sin x \neq \pm \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} = \pm \frac{\sqrt{2}}{2}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}\}$ ۵

الف) $\sin x - 1 \geq 0$ $\sin x \geq 1$ $2k\pi + \frac{\pi}{2} \leq x \leq 2k\pi + \frac{3\pi}{2}$ $D_f = [2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}]$ $[2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}]$  1, 2	ب) $\cos x - 1 \geq 0$ $\cos x \geq 1$ $-1 \leq \cos x \leq 1 \Rightarrow \cos x = 1$ $D_f = [2k\pi, 2k\pi + \frac{\pi}{2}]$
الف) $-1 \leq \cos y \leq 1$ $-1 \leq x - 3 \leq 1$ $2 \leq x \leq 4$ $D_f = [-4, -2] \cup [2, 4]$ 3	ب) $-1 \leq x^2 + 3x + 1 \leq 1$ ① $0 \leq (x+1)(x+2) \Rightarrow \frac{-2}{-1} \leq x \leq \frac{-1}{-1}$ $\Rightarrow -2 \leq x \leq -1$ ② $x(x+3) \leq 0 \Rightarrow \frac{-3}{-1} \geq x \geq \frac{0}{0}$ $\Rightarrow -3 \leq x \leq 0$ $D_f = [-3, -1] \cup [-1, 0]$ 
الف) $2 - \log_3((x-2)) \rightarrow x-2 > 0 \Rightarrow x > 2$ $2 - \log_3 x \geq 0 \Rightarrow \log_3 x \leq 2$ $\Rightarrow x-2 \leq 9 \Rightarrow x \leq 11 \Rightarrow 2 < x \leq 11$ $D_f = (2, 11]$ 4	ب) $x^3 - x > 0 \Rightarrow x(x-1)(x+1) > 0$ $\frac{-1}{-1} < x < \frac{0}{0} < \frac{1}{1}$ $D_f = (-1, 0) \cup (1, +\infty)$ 
الف) $x^n + 1 \neq 0$ $x^n \neq -1$ $D_f = \mathbb{R}$	ب) $x^n - 1 \neq 0$ $x^n \neq 1$ $\Rightarrow x = 0$ $D_f = \mathbb{R} - \{0\}$
ج) $x^n - 2 \neq 0$ $x^n \neq 2$ $\Rightarrow x \neq \frac{1}{2}$ $D_f = \mathbb{R} - \{\frac{1}{2}\}$ 5	د) $x^n - 3 \neq 0$ $x^n \neq 3$ $D_f = \mathbb{R} - \{\log_3 3\}$
الف) $y = (x+1)!$ $x+1 \in \mathbb{W}$ $x \in \frac{\mathbb{W}-1}{1}$ $D_f = \{x \mid x = \frac{k-1}{1}, k \in \mathbb{W}\}$ 6	ب) $y = (\frac{x^2-2}{x-5})!$ $\frac{x^2-2}{x-5} \in \mathbb{W} \Rightarrow x \in \frac{-5\mathbb{W}+2}{1\mathbb{W}-3}$ $\Rightarrow D_f = \{x \mid x = \frac{5k-2}{1k-3}, k \in \mathbb{W}\}$