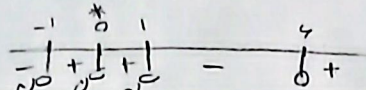
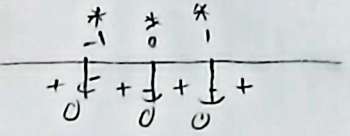


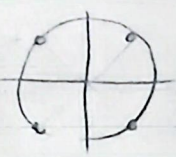
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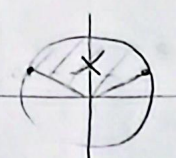
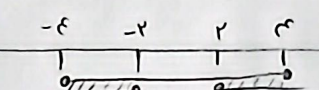
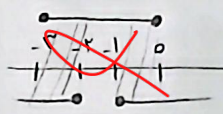
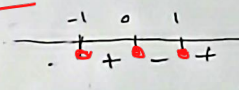
الف) $\frac{x^2 - 4x}{x^2 - x} \geq 0$ $x^2 - x = 0$ $x(x-4) \leq 0$ $x(x^2 - 1) \leq 0$ $x(x-1)(x+1) \leq 0$ $x \leq 0$ $x \leq 1$ $x \geq -1$ $D_f = (-1, 0) \cup (0, 1) \cup [4, +\infty)$ 	ب) $\frac{x^0 - x^2}{x^2 - x} \geq 0$ $x(x^2 - 1) \leq 0$ $x(x-1)(x+1) \leq 0$ $x^2(x^2 - 1) \leq 0$ $x^2 \leq 0$ $x \leq 0$ $D_f \subseteq \mathbb{R} - \{-1, 0, 1\}$ 	۱
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الف) $x + x > 0$ $x > -x$ $D_f = \mathbb{R}^+$ $\oplus \checkmark$ $\ominus \times$ $\odot \times$ $\textcircled{2} \checkmark$	ب) $x x > 0$ $D_f = \mathbb{R}^+$ $\oplus \checkmark$ $\ominus \times$ $\odot \times$	۲
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الف) $2 - [x] \geq 0$ $2 \geq [x]$ $x \leq 2$ $D_f = (-\infty, 2)$ $\textcircled{2} \checkmark$	ب) $2 - [x] > 0$ $2 > [x]$ $x < 2$ $D_f = (-\infty, 2)$	۳
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الف) $\left(\left[x - \frac{1}{2} \right] + \left[x + \frac{5}{2} \right] \geq 0 \right)^{+1}$ $2 \left[x + \frac{5}{2} \right] \geq 1$ $\left[x + \frac{5}{2} \right] \geq \frac{1}{2}$ $\left[x + \frac{5}{2} \right] \geq 1$ $x \geq \frac{1}{2}$ $D_f = \left[\frac{1}{2}, +\infty \right)$ $\textcircled{2} \checkmark$	ب) $\left[x - \frac{1}{2} \right] + \left[-\left(x - \frac{1}{2} \right) \right] \geq 0$ $x - \frac{1}{2} \in \mathbb{Z}$ $x \in \mathbb{Z} + \frac{1}{2}$ $D_f = \{x \mid x \leq k + \frac{1}{2}, k \in \mathbb{Z}\}$	۴
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الف) $y = \frac{2}{\sin x - 1}$ $\sin x \neq 1$ $D_f = \mathbb{R} - \{2\pi k + \frac{\pi}{2}\}$ 	ب) $2 \sin^2 x \neq 1$ $\sin^2 x \neq \frac{1}{2}$ $\sin x \neq \pm \frac{1}{\sqrt{2}} \rightarrow \frac{1}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}} \leq \pm \frac{\sqrt{2}}{\sqrt{2}}$ $D_f = \mathbb{R} - \{2\pi k + \frac{\pi}{4}, 2\pi k + \frac{3\pi}{4}\}$ 	۵
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الف) $r \sin x - 1 \geq 0$ $r \sin x \geq 1$ $\sin x \geq \frac{1}{r}$  Ⓟ ✓ $D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$	ب) $\cos x - 1 \geq 0$ $\cos x \geq 1$ محدد جيبا بايديتي $-1 \leq \cos x \leq 1$ $\cos x = 1$ $D_f = \{ 2k\pi \}$ 	6
الف) $-1 \leq x - r \leq 1$ $+r$ $r \leq x \leq r+1$ $r \leq x$ $x \leq r+1$ $x \geq r$ $-r-1 \leq x \leq r+1$ $x \leq -r$ 1, ٢, ٣ $[-r-1, -r] \cup [r, r+1] = D_f$ 	ب) $-1 \leq x^2 + rx + 1 \leq 1$ محدد جيبا بايديتي $-1 \leq x^2 + rx + 1 \leq 1$ $0 \leq (x+1)(x+r)$ $+ \quad - \quad - \quad +$ Ⓟ Ⓟ $x^2 + rx + 1 \leq 1$ -1 $x(x+r) \leq 0$ $+ \quad - \quad - \quad +$ Ⓟ Ⓟ $[-r, 0]$ $D_f = [-r-1, -r] \cup [-1, 0]$ 	7
الف) $r - \log_r(x-r) \geq 0$ $r \geq \log_r(x-r)$ $x-r > 0$ $x-r \leq 9$ $x > r$ $x \leq 11$ $(r, 11] = D_f$	ب) $x^2 - x > 0$ $x(x-1) > 0$ $x(x+1)(x-1) > 0$ $Ⓟ$ Ⓟ Ⓟ 1, ٢, ٣ $D_f = (-1, 0) \cup (1, +\infty)$ 	8
الف) $\epsilon^{x+1} \neq 0$ $\epsilon^x = -1$ $D_f = \mathbb{R}$	ب) $\epsilon^x - 1 \neq 0$ $\epsilon^x = 1$ $D_f = \mathbb{R} - \{0\}$ Ⓟ ✓	9
الف) $\epsilon x + 1 \in W$ $\epsilon x \in W-1$ $x \in \frac{W-1}{\epsilon}$ Ⓟ ✓ $\{x x \in \frac{k-1}{\epsilon}, k \in W\} = D_f$	ب) $\frac{rx-r}{rx-0} \in W$ $\xrightarrow{1 \text{ طرف}}$ $x \in -\frac{-0W+r}{rW-r} = \frac{0W-r}{rW-r}$ $rxW-0W = rx-r$ $rxW-rx \leq 0W-r$ $x(rx-r) \leq 0W-r$ $x \in \frac{0W-r}{rx-r}$ $\{x x \in \frac{0k-r}{rk-r}, k \in W\} = D_f$	10