① الف) $2-x \geq 0$, $4-\sqrt{2-x} \geq 0$

$x \leq 2$, $4 \geq \sqrt{2-x}$

$16 \geq 2-x$

$x \geq -14$

$D_f = [-14, 2]$

$-14 \leq x \leq 2$

ب) $x-2 \geq 0$, $3-\sqrt{x-2} \geq 0$

$x \geq 2$, $3 \geq \sqrt{x-2}$

$9 \geq x-2$

$11 \geq x$

$D_f = [2, 11]$

$2 \leq x \leq 11$

② الف) $4-2x^2 \geq 0$

$4 \geq 2x^2$

$2 \geq x^2$

$-\sqrt{2} \leq x \leq \sqrt{2}$

$D_f = [-\sqrt{2}, \sqrt{2}]$

ب) $3|x|-9 \geq 0$

$3|x| \geq 9$

$|x| \geq 3$

$\begin{cases} x \geq 3 \\ x \leq -3 \end{cases}$

$D_f = (-\infty, -3] \cup [3, +\infty)$

③ الف) $|x|-3 \neq 0$

$|x| \neq 3$

$x \neq 3, -3$

$D_f = \mathbb{R} - \{-3, 3\}$

ب) مخرج: $x \geq 0$

$\sqrt{x}-3 \neq 0$

$\sqrt{x} \neq 3$

$x \neq 9$

$D_f = [0, 9) \cup (9, +\infty)$

④ الف) $3-|x| \geq 0$

$3 \geq |x|$

$-3 \leq x \leq 3$

مخرج: $|x|+2 \neq 0$

$|x| \neq -2$ (همیشه برقرار است)

$D_f = [-3, 3]$

ب) $4-x^2 \geq 0$

$4 \geq x^2$

$-2 \leq x \leq 2$

مخرج: $|x|-1 \neq 0$

$|x| \neq 1$

$x \neq -1, 1$

$D_f = [-2, 2] - \{-1, 1\}$

⑥

ب) $x|x| > 0$

⊕ ✓
⊖ α
⊙ α

$R_f = \mathbb{R}^+$

الف) $x + |x| > 0$

⊕ ✓
⊖ α
⊙ α

$R_f = \mathbb{R}^+$

⑤

ب) $2 - [x] > 0$

$2 > [x]$

$R_f = (-\infty, 2)$

الف) $2 - [x] \geq 0$

$2 \geq [x]$

$R_f = (-\infty, 3)$

⑦

ب) $-x[x] > 0$

⊕ α
⊖ α
⊙ α

$R_f = \phi$

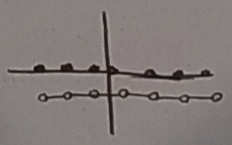
الف) $x[x] > 0$ (بیشتر کنید؟)

⊕ ✓
⊖ ✓
⊙ α

$R_f = (-\infty, 0) \cup [1, +\infty)$

⑧

ب) $[x - \frac{1}{3}] + [-x + \frac{1}{3}] \geq 0$



$R_f = \{x / K + \frac{1}{3} = x, K \in \mathbb{Z}\}$

الف) $[x - \frac{1}{3}] + [x + \frac{2}{3}] \geq 0$

$[x + \frac{2}{3}] + [x + \frac{2}{3}] \geq 1$

$2[x + \frac{2}{3}] \geq 1$

$[x + \frac{2}{3}] \geq \frac{1}{2}$

$R_f = [\frac{1}{3}, +\infty)$

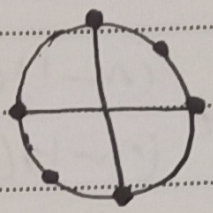
بقیه‌ی سوال هم تکلیف شب ۴۰۱

Date : Subject :

۹) $\cot = \frac{\cos}{\sin} \rightarrow \sin \neq 0$

$\tan = \frac{\sin}{\cos} \rightarrow \cos \neq 0$

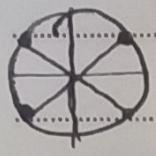
$\tan \neq 1$



الف) $2\sin^2 x - 1 \neq 0$

$\sin^2 \neq \frac{1}{2}$

$\sin \neq \sqrt{\frac{1}{2}}$



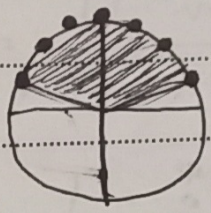
$D_f = \mathbb{R} - \left\{ \frac{k\pi}{2} + \frac{\pi}{4} \right\}$

$D_f = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi + \frac{\pi}{4} \right\}$

۱۰

الف) $2\sin x \geq 1$

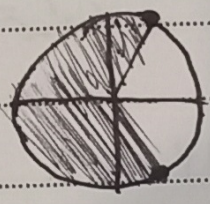
$\sin x \geq \frac{1}{2}$



$D_f = \left[2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right]$

ب) $1 - 2\cos x \geq 0$

$\cos x \leq \frac{1}{2}$



$D_f = \left[2k\pi + \frac{\pi}{3}, 2k\pi - \frac{\pi}{3} \right]$