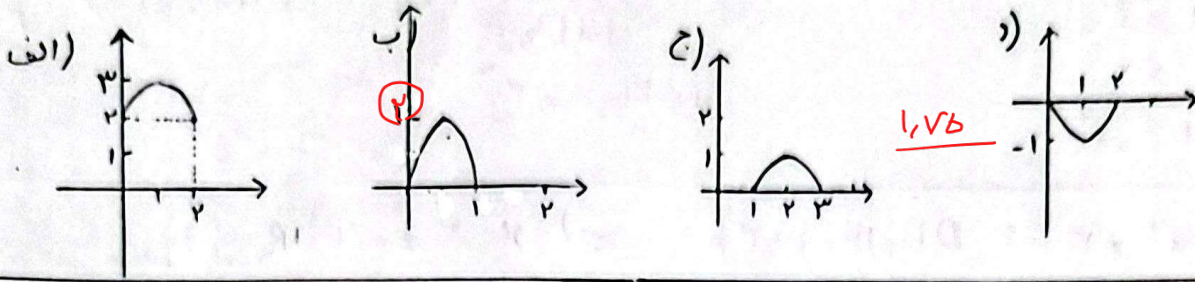
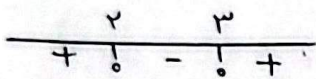


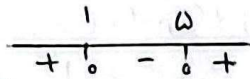
۱۹



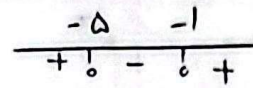
الف) $(x-2)(x-3) > 0$ ب) $(x-1)(x-5) < 0$ ج) $(x+1)(x+5) > 0$



$D_f = (-\infty, 2) \cup (3, +\infty)$

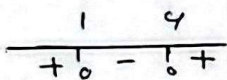


$D_f = (1, 5)$



$D_f = (-\infty, -5] \cup [-1, +\infty)$

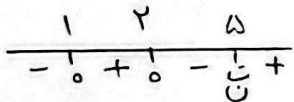
د) $(x-1)(x-4) \leq 0$



$D_f = [1, 4]$

✓

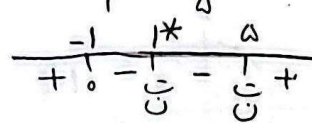
الف) $\frac{(x-1)(x-2)}{x-5} < 0$



$D_f = (-\infty, 1) \cup (2, 5)$

✓

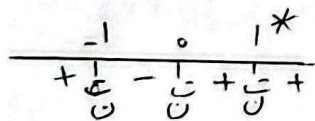
ب) $\frac{(x-1)(x+1)}{(x-1)(x-5)} > 0$



$D_f = (-\infty, -1] \cup (5, +\infty)$

(3)

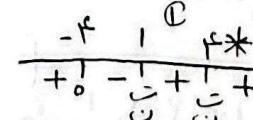
الف) $\frac{x^3-1}{x^3-x} > 0 \rightarrow \frac{x^3-1}{x(x^2-1)} > 0$



$D_f = (-\infty, -1) \cup (0, +\infty) - \{1\}$

✓

ب) $\frac{x^2-14}{x^2-5x+4} > 0$



$D_f = (-\infty, -4] \cup (1, +\infty) - \{4\}$

(4)

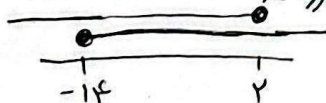
الف) $2-x > 0$ $4-\sqrt{2-x} > 0$

$x \leq 2$

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

$2-x \leq 16$

$x \geq -14$



$D_f = [-14, 2]$

ب) $x-2 > 0$ $3-\sqrt{x-2} > 0$

$x > 2$

$\sqrt{x-2} \leq 3$

①

$x-2 \leq 9$

① ∩ ②

$x \leq 11$ ②

$D_f = [2, 11]$

✓

(5)

الف) $4 - 2x^2 \geq 0$
 $2x^2 \leq 4$
 $x^2 \leq 2$
 $-\sqrt{2} \leq x \leq \sqrt{2}$

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

ب) $3|x| - 9 \geq 0$

$3|x| \geq 9$

$|x| \geq 3$

$x \leq -3$ یا $x \geq 3$

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

(6)

الف) $|x| \neq 3$

$x \neq 3, -3$

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

ب) $\sqrt{x} - 3 \neq 0$ $D_f = \mathbb{R} - \{9\}$

تقریب شود
 $\sqrt{x} \neq 3$
 $x \neq 9$

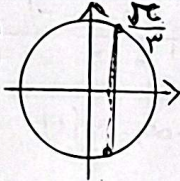
$[0, +\infty)$

(7)

الف) $2(\cos x - 1) \neq 0$

$2\cos x \neq 1$

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

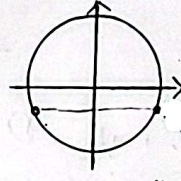


$D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{3}, 2k\pi + \frac{\pi}{3}\}$

ب) $2\sin x + 1 \neq 0$

$2\sin x \neq -1$

$\sin x \neq -\frac{1}{2}$

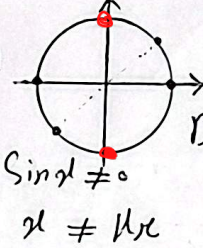


$D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{6}, 2k\pi + \frac{7\pi}{6}\}$

(8)

ج) $\cot x \neq 1$

$\cot x = \frac{\cos x}{\sin x} \rightarrow \sin x \neq 0$
 $x \neq k\pi$



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

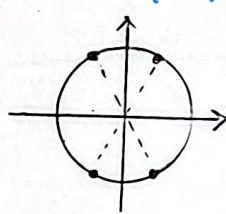
1, 7, 8

د) $4\sin^2 x - 3 \neq 0$

$4\sin^2 x \neq 3$

$\sin^2 x \neq \frac{3}{4}$

$\sin x \neq \pm \frac{\sqrt{3}}{2}$



$D_f = \mathbb{R} - \{k\pi - \frac{\pi}{3}, k\pi + \frac{\pi}{3}\}$

$2|x-2| - \frac{1}{4} > 0$

$2|x-2| > \frac{1}{4} \rightarrow |x-2| > \frac{1}{8}$

$\begin{cases} x-2 > \frac{1}{8} \rightarrow x > 2\frac{1}{8} \\ x-2 < -\frac{1}{8} \rightarrow x < 2\frac{1}{8} \end{cases} \quad D_f = (-\infty, 2\frac{1}{8}) \cup (2\frac{1}{8}, +\infty)$

9

الف) $4 - 2|x| \geq 0$

$2|x| \leq 4$

$|x| \leq 2 \rightarrow -2 \leq x \leq 2$

$D_f = [-2, 2]$

ب) $\frac{|x|}{|x|} \geq 0$

$|x| \neq 0$
 $x \neq 0$

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

(10)