

الف) $4 - 2x^2 \geq 0$

$4 \geq 2x^2$

$2 \geq x^2$

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

$-\sqrt{2} \leq x$

ب) $3|x-9| \geq 0$

$3|x| \geq 9$

$|x| \geq 3 \quad D_f = (-\infty, -3] \cup [3, +\infty)$

$x \geq 3$

$x \leq -3$

✓

الف) $|x| - 3 \neq 0$

$|x| \neq 3$

$x \neq \pm 3$

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

ب) $\sqrt{x} - 3 \neq 0$

$\sqrt{x} \neq 3$

$x \neq 9$

$x \geq 0$

$D_f = [0, +\infty) - \{9\}$

✓

الف) $2 \cos x - 1 \neq 0$

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



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

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2) $\frac{\cos x}{\sin x} \neq 1 \quad k\pi + \frac{\pi}{4}, k$

$\cos x \neq \sin x$

$\sin x \neq 0 \quad k\pi \quad D_f = \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}\}$

$\sin^2 x \neq 1$

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

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

$D_f = \{2k\pi \pm \frac{\pi}{4}, 2k\pi \pm \frac{3\pi}{4}\}$

ب) $2 \sin x \neq -1$

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



$D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}\}$

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

$2|x-2| > \frac{1}{x} \quad x < \frac{1}{x}$

$|x-2| > \frac{1}{2x} \quad D_f = (-\infty, \frac{1}{x}) \cup (\frac{1}{x}, +\infty)$

$x-2 > \frac{1}{2x}$

$x > \frac{1}{x}$

ل, ص ب

الف) $4 - 2|x| \geq 0$

$4 \geq 2|x|$

$2 \geq |x|$

$2 \geq x \quad D_f = [-2, 2]$

$-2 \leq x$

$-2 \leq x \leq 2$

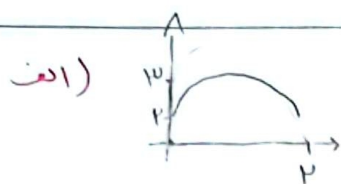
ب) $\frac{|x|}{|x|} \Rightarrow$ هواره مثبت $x \neq 0$

$(-\infty, 0) \cup (0, +\infty)$

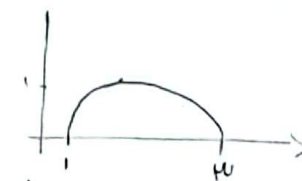
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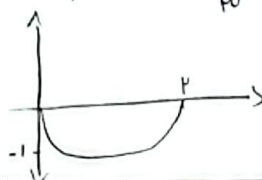
۲)



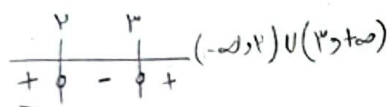
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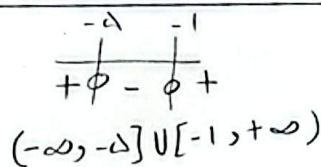
۳) ✓
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الف) $(x-2)(x-3) > 0$



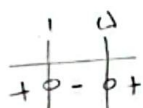
۲) $(x+1)(x+5) \geq 0$



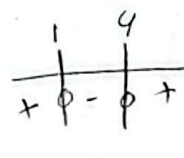
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ب) $(x-1)(x-5) < 0$

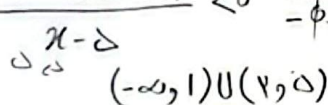
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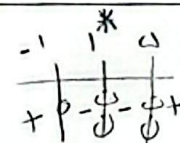
۳) $(x-1)(x-4) \leq 0$



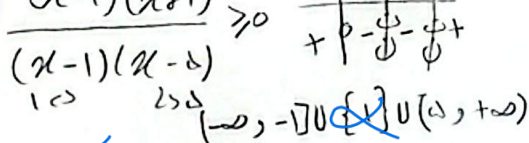
الف) $(x-1)(x-5) < 0$



ب) $(x-1)(x+1) \geq 0$



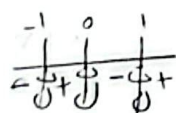
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الف) $x^3 - x > 0$



$x(x^2 - 1) > 0$

$x = 0$ or $x^2 - 1 > 0 \Rightarrow (-\infty, -1) \cup (1, \infty)$

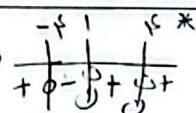
$x^3 \geq 1$

$x \geq 1$

✓

۴)

ب) $(x-1)(x-4) > 0$



$(x-4)(x+4) \geq 0 \Rightarrow (-\infty, -4] \cup (4, \infty)$

$D_f =$

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الف) $2-x \geq 0$

$2 \geq x$

$4 - \sqrt{2-x} \geq 0$

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

$14 \geq 2-x$

$x \geq -14$

$D_f = [-14, 2]$

ب) $x-2 \geq 0$

$x \geq 2$

$3 - \sqrt{x-2} \geq 0$

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

$9 \geq x-2$

$11 \geq x \Rightarrow D_f = [2, 11]$

$[2, 11]$

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