

۱۵، ۲۵

نام و نام خانوادگی علی محمدیان پاسخنامه تشریحی تکلیف شماره ۴ کلاس -۳ -۳

الف) $2-x \geq 0 \rightarrow 2 \geq x$ و $4-\sqrt{x} \geq 0 \rightarrow 4 \geq \sqrt{x} \rightarrow 16 \geq 2-x \rightarrow x \geq -14 \Rightarrow D_f = [-14, 2]$

ب) $x-2 \geq 0 \rightarrow x \geq 2$ و $3-\sqrt{x} \geq 0 \rightarrow 3 \geq \sqrt{x} \rightarrow 9 \geq x-2 \Rightarrow 11 \geq x \Rightarrow D_f = [2, 11]$

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الف) $4-x^2 \geq 0 \rightarrow 4 \geq x^2 \rightarrow 2 \geq x \Rightarrow \sqrt{2} \geq x \Rightarrow D_f = [\sqrt{2}, +\infty)$

الف) $3|x|-9 \geq 0 \rightarrow 3|x| \geq 9 \Rightarrow |x| \geq 3 \Rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$

الف) $\frac{|x|+1}{|x|-3} \in \mathbb{R} \Rightarrow |x|-3 \neq 0 \rightarrow |x| \neq 3 \Rightarrow D_f = \mathbb{R} - \{-3, 3\}$

ب) $\frac{\sqrt{x}+1}{\sqrt{x}-3} \in \mathbb{R} \Rightarrow \sqrt{x}-3 \neq 0 \rightarrow \sqrt{x} \neq 3 \Rightarrow D_f = \mathbb{R} - \{9\}$

$x \geq 0 \rightarrow [0, +\infty) - \{9\}$

$D_f = [-3, 3]$

الف) $\sqrt{3-|x|} \geq 0 \rightarrow 3-|x| \geq 0 \rightarrow 3 \geq |x|$ و $|x|+2 \neq 0 \rightarrow |x| \neq -2 \rightarrow x \in \mathbb{R}$

ب) $4-x^2 \geq 0 \rightarrow 4 \geq x^2 \rightarrow 2 \geq x$ و $|x|-1 \neq 0 \rightarrow |x| \neq 1 \Rightarrow D_f = [2, +\infty) - \{1, -1\}$

الف) $x+|x| > 0 \rightarrow |x| > -x \Rightarrow D_f = (0, +\infty)$

ب) $x|x| > 0$
 $|x| > 0$
 $\oplus \checkmark 2 \times 2 = 4$
 $\ominus x \times x = 0 \Rightarrow D_f = (0, +\infty)$
 $\ominus x - 2 \times 1 - 2 = -4$

الف) $2 - [x] \geq 0 \rightarrow 2 \geq [x] \Rightarrow D_f = (-\infty, 3)$

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ب) $2 - [x] > 0 \rightarrow 2 > [x] \Rightarrow D_f = (-\infty, 2)$

الف) $x[x] \neq 0 \Rightarrow D_f = \mathbb{R} - \{0\}$
 $\circ 1, \infty$

0, ∞

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ب) $-x[x] > 0$
 $\circ 1, \infty$
 $\oplus x - 2 \times |x| = -4$
 $\ominus x \times x_0 = 0$
 $\ominus \sqrt{-(-2) \times 1 - 2} = 4$
 $\Rightarrow D_f = (-\infty, 0)$

الف) $[x - \frac{1}{x}] + [x + \frac{x}{x}] \geq 0 \Rightarrow D_f = [\frac{1}{x}, +\infty)$

1, ∞

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ب) $[x - \frac{1}{x}] + [-x + \frac{1}{x}] \geq 0 \Rightarrow D_f = \{k + \frac{1}{x}, k \in \mathbb{Z}\}$

$\mathbb{R} - \{k\pi + \frac{\pi}{2}\}$

الف) $2 \sin^2 x - 1 \neq 0 \Rightarrow 2 \sin^2 x \neq 1 \Rightarrow \sin^2 x \neq \frac{1}{2} \Rightarrow \sin x \neq \pm \frac{\sqrt{2}}{2} \Rightarrow D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$

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ب) $\tan x + 1 \neq 0 \rightarrow \tan x \neq -1 \Rightarrow D_f = \mathbb{R} - \{k\pi - \frac{\pi}{4}\}$
 $\circ k\pi + \frac{\pi}{4}$

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الف) $2 \sin x - 1 \geq 0 \rightarrow 2 \sin x \geq 1 \rightarrow \sin x \geq \frac{1}{2} \Rightarrow D_f = [2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6}]$

1, ∞

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ب) $1 - 2 \cos x \geq 0 \rightarrow 1 \geq 2 \cos x \rightarrow \frac{1}{2} \geq \cos x \Rightarrow D_f = [k\pi - \frac{\sqrt{2}\pi}{2}, k\pi + \frac{\pi}{2}]$

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