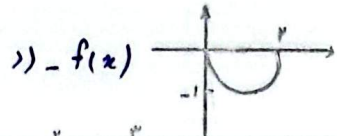
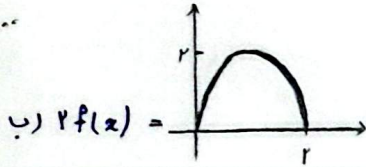
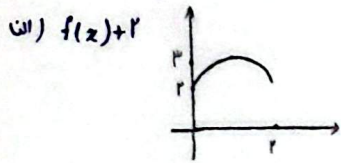
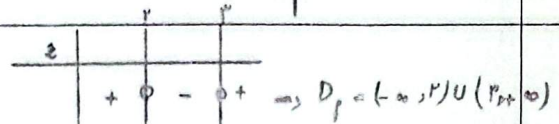


نام و نام خانوادگی (نام) پاسخنامه تشریحی تکلیف شماره ... کلاس (م) (م) (م)

۲۰ آفرین



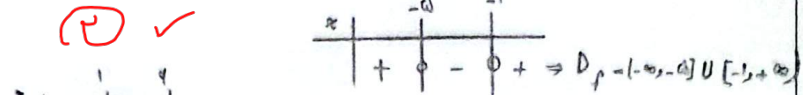
الف) $x^2-5x+4 > 0 \Rightarrow (x-1)(x-4) > 0 \Rightarrow$



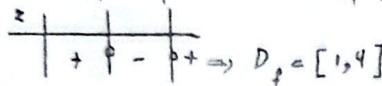
ب) $x^2+4x+5 < 0 \Rightarrow (x+1)(x+5) < 0 \Rightarrow$



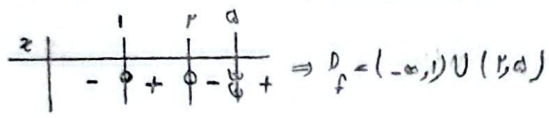
ج) $x^2+4x+5 \geq 0 \Rightarrow (x+1)(x+5) \geq 0 \Rightarrow$



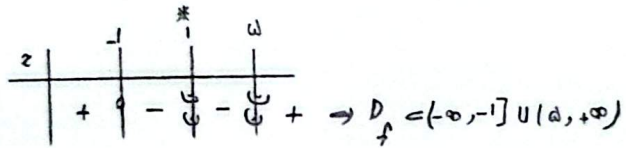
د) $x^2-7x+9 \leq 0 \Rightarrow (x-4)(x-1) \leq 0 \Rightarrow$



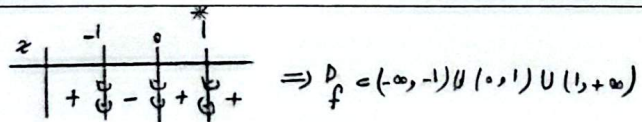
الف) $\frac{x^2-3x+2}{x-5} < 0 \Rightarrow \frac{(x-2)(x-1)}{(x-5)} < 0 \Rightarrow$



ب) $\frac{x^2-1}{x^2+4x+5} \geq 0 \Rightarrow \frac{(x+1)(x-1)}{(x+5)(x+1)} \geq 0 \Rightarrow$



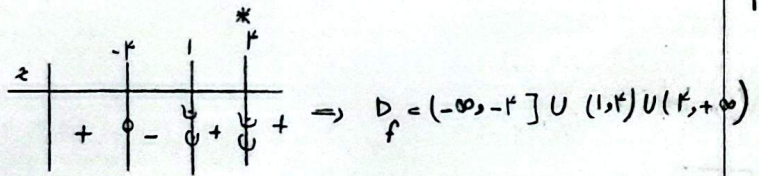
الف) $\sqrt{\frac{x^3-1}{x^2-2}} = \frac{x^3-1}{x^2-2} \geq 0 \Rightarrow$



$x(x^2-1) < x(x-1)(x+1)$

(۲) ✓

ب) $\sqrt{\frac{x^2-14}{x^2-5x+2}} = \frac{(x-4)(x+4)}{(x-4)(x-1)} \geq 0 \Rightarrow$



الف) $\sqrt{x-2} = x-2 \geq 0 \Rightarrow x \geq 2$

$x-2 \geq 0 \Rightarrow \sqrt{x-2} \leq 2 \Rightarrow x-2 \leq 4 \Rightarrow x \leq 6 \Rightarrow$

$\Rightarrow D_f = [2, 6]$

ب) $\sqrt{x-2} = x-2 \geq 0 \Rightarrow x \geq 2$

(۲) ✓

$x-2 \geq 0 \Rightarrow \sqrt{x-2} \leq 3 \Rightarrow x-2 \leq 9 \Rightarrow x \leq 11 \Rightarrow$

$\Rightarrow D_f = [2, 11]$

$$\text{الف) } y = \sqrt{1-2x^2} \rightarrow 1-2x^2 \geq 0 \Rightarrow 2(1-x^2) \geq 0 \rightarrow 2(\sqrt{1-x^2})(\sqrt{1-x^2}) \geq 0 \Rightarrow \begin{array}{c} -\sqrt{1-x^2} \quad \sqrt{1-x^2} \\ | \quad \quad \quad | \\ - \quad \quad \quad + \quad \quad \quad - \end{array} \rightarrow$$

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

(۲) ✓

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$$\text{ب) } y = \sqrt{3|x|-9} \Rightarrow 3|x|-9 \geq 0 \Rightarrow 3|x| \geq 9 \rightarrow |x| \geq 3 \rightarrow \begin{cases} x \geq 3 \\ x \leq -3 \end{cases} \Rightarrow D_f = (-\infty, -3] \cup [3, +\infty)$$

$$\text{الف) } y = \sqrt{\frac{|x|+1}{|x|-3}} \Rightarrow |x|-3 \neq 0 \Rightarrow |x| \neq 3 : x \neq \pm 3 \Rightarrow D_f = \mathbb{R} - \{\pm 3\}$$

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$$\text{ب) } \sqrt{\frac{\sqrt{x+1}}{\sqrt{x-3}}} \rightarrow x \geq 0 \Rightarrow \begin{cases} x \geq 0 \\ \sqrt{x-3} \neq 0 \Rightarrow \sqrt{x} \neq 3 \Rightarrow x \neq 9 \end{cases} \Rightarrow D_f = [0, +\infty) - \{9\}$$

(۲) ✓

$$\text{الف) } \frac{\sin x}{1-\cos x} = 1-\cos x \neq 0 \rightarrow 1-\cos x \neq 0 \rightarrow \cos x \neq 1 \Rightarrow D_f = \mathbb{R} - \{2k\pi \pm \frac{\pi}{2}\}$$

$$\text{ب) } \frac{\cos y+1}{1-\sin x} = 1-\sin x \neq 0 \rightarrow \sin x \neq 1 \Rightarrow D_f = \mathbb{R} - \{2k\pi - \frac{\pi}{2}, 2k\pi + \frac{\pi}{2}\}$$

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$$\text{ج) } y = \frac{\frac{\sin x}{\cos x} + 2}{\cot x - 1} = \frac{\tan x + 2}{\cot x - 1} \Rightarrow \cot x - 1 \neq 0 \Rightarrow \cot x \neq 1, \sin x \neq 0 \Rightarrow D_f = \mathbb{R} - \{k\pi \cup k\pi + \frac{\pi}{2} \cup k\pi + \frac{\pi}{4}\}$$

(۲) ✓

$$y = \frac{1}{\sqrt{1-x-2|-\frac{1}{x}}}} : \sqrt{1-x-2|-\frac{1}{x}} > 0 \Rightarrow 1-x-2|-\frac{1}{x}| > 0 \Rightarrow |x-2| > \frac{1}{x}$$

(۲) ✓

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چون تابع زوج و غیر متناهی باشد

$$x-2 < \frac{1}{x} \text{ و } x-2 > \frac{1}{x} \Rightarrow x < \frac{1}{x} \text{ و } x > \frac{1}{x} \Rightarrow D_f = (-\infty, \frac{1}{x}) \cup (\frac{1}{x}, +\infty)$$

$$y = \frac{\sin x+1}{1-\sin^2 x} = \frac{\sin x+1}{1-\sin^2 x} \Rightarrow 1-\sin^2 x \neq 0 \Rightarrow 1-\sin^2 x \neq 0 \rightarrow \sin^2 x \neq 1 \rightarrow \sin x \neq \pm 1 \Rightarrow D_f = \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$$

✓

$$\text{الف) } \sqrt{1-2|x|} = 1-2|x| \geq 0 \Rightarrow 2|x| \leq 2 \Rightarrow |x| \leq 1 \Rightarrow -1 \leq x \leq 1 \Rightarrow D_f = [-1, 1]$$

(۲) ✓

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$$\text{ب) } y = \sqrt{\frac{|x|}{|x|}} \Rightarrow x \neq 0$$

از آنجایی که همیشه عدد حقیقی و عددی نامعین دارد و زیر رادیکال نیز باید نامعین باشد پس

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

تأثیر ۱ و ۰ در تابع و گویا