

subject: حکم بر A کالین ۶ Date: ریلی

طالما جفری

بیشتر اساتذہ مسافر تھے و شواہد ہر گز نہ ہو سکتے

(ہر گز نہ ہوا)

subject:

Date:

$$f(x) = \frac{x+2}{4x^3 - 20x^2 + 31x - 15}$$

$$\Rightarrow \text{برای } x \text{ بخش نیز: } 4 - 20 + 31 - 15 = 0 \Rightarrow$$

$$\begin{array}{r|l} 4x^3 - 20x^2 + 31x - 15 & x-1 \\ -4x^3 + 4x^2 & 4x^2 - 16x + 15 \\ \hline -16x^2 + 31x - 15 & \\ +16x^2 - 16x & \\ \hline 15x - 15 & \\ -15x + 15 & \\ \hline 0 & \end{array} \quad (4x^2 - 16x + 15)(x-1) \neq 0$$

$$\Delta = b^2 - 4ac = (-16)^2 - 4(4)(15) = 256 - 240 = 16$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{16 \pm \sqrt{16}}{8} = \frac{16 \pm 4}{8}$$

$$D_f = IR - \left\{ \frac{1}{2}, 1, \frac{13}{2} \right\}$$

استان شهد
امامزاده سید محمد (ع)

$$b) y = \frac{x+3}{3x^3 - x^2 - 11x - 5} \Rightarrow 3x^3 - x^2 - 11x - 5 \neq 0$$

$$3 - 1 = -2 \quad -1 - 5 = -6 \Rightarrow \text{برای } x+3 \text{ بخش پذیر}$$

$$\begin{array}{r} 3x^3 - x^2 - 11x - 5 \quad | \quad x+1 \\ - 3x^3 \quad 3x^2 \\ \hline \end{array}$$

$$- 3x^2 - 11x - 5$$

$$+ 3x^2 + 3x$$

$$- 8x - 5$$

$$+ 8x + 8$$

0

$$(3x^2 - 4x - 5)(x+1) = 0$$

$$\Delta = b^2 - 4ac = (-4)^2 - 4(3)(-5)$$

$$= 76$$

$$x = \frac{-b \pm \sqrt{\Delta}}{2a}$$

$$= \frac{-4 \pm \sqrt{76}}{6}$$

$$\frac{-4 + 1}{3} = -1$$

$$\frac{-4 - 1}{3} = -\frac{5}{3}$$

$$Df = \mathbb{R} - \left\{ 2, -1, -\frac{5}{3} \right\}$$

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$$\text{الف) } y = \frac{x+1}{x-\sqrt{3-2x}} \Rightarrow x-\sqrt{3-2x} \neq 0$$

$$\Rightarrow x \neq \sqrt{3-2x} \Rightarrow x^2 \neq 3-2x \Rightarrow$$

$$x^2 + 2x - 3 \neq 0 \Rightarrow x = 1$$

$$x = \frac{c}{a} = \frac{-3}{1} = -3$$

$$1+2-3=0$$

$$D_f = IR - \{1, -3\}$$

$$1 - \frac{\sqrt{3-2x}}{1} = 0 \checkmark$$

$$-3 - \frac{\sqrt{3-2(-3)}}{1} = 0 \Rightarrow -3 - \sqrt{3-2(-3)} = 0 \Rightarrow -3 - \sqrt{3+6} = 0 \Rightarrow -3 - \sqrt{9} = 0 \Rightarrow -3 - 3 = 0 \Rightarrow -6 = 0$$

$$\text{ب) } y = \frac{x+2}{x-\sqrt{3x-2}} \Rightarrow x-\sqrt{3x-2} \neq 0$$

$$\Rightarrow x \neq \sqrt{3x-2} \Rightarrow x^2 \neq 3x-2 \Rightarrow$$

$$x^2 - 3x + 2 \neq 0 \Rightarrow x = 1$$

$$x = \frac{c}{a} = \frac{2}{1} = 2$$

$$1+2-3=0$$

$$D_f = IR - \{1, 2\}$$

$$1 - \frac{\sqrt{3x-2}}{1} = 0$$

$$2 - \frac{\sqrt{3x-2}}{1} = 0$$

(ع) استان شمس امامزاده سید محمد

$$b) \frac{\sin x}{y \cos x - 1} \Rightarrow y \cos x - 1 \neq 0 \quad (y)$$

$$\Rightarrow y \cos x \neq 1 \Rightarrow \cos x \neq \frac{1}{y}$$

90, 300

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

$$c) \frac{\cos x + 1}{y \sin x + 1} \Rightarrow y \sin x + 1 \neq 0 \Rightarrow y \sin x \neq -1$$

$$\Rightarrow \sin x \neq -\frac{1}{y} \Rightarrow D_f = \mathbb{R} - \left\{ yk\pi + \frac{3\pi}{2}, yk\pi + \frac{11\pi}{2} \right\}$$

210, 330

$$d) y = \frac{\tan x + 1}{\cot x - 1} \Rightarrow \begin{matrix} 90, 270 \times \frac{\pi}{2} \\ \cot x - 1 \neq 0 \Rightarrow \cot x \neq 1 \\ 180, 360 \times \frac{\pi}{2} \end{matrix}$$

$$\Rightarrow D_f = \mathbb{R} - \left\{ yk\pi, yk\pi + \frac{\pi}{y}, yk\pi + \frac{\pi}{y}, yk\pi + \frac{2\pi}{y}, yk\pi + \frac{3\pi}{y}, yk\pi + \frac{4\pi}{y} \right\}$$

$$e) y = \frac{\sin x + 1}{f \sin^2 x - 3} \Rightarrow \begin{matrix} f \sin^2 x - 3 \neq 0 \Rightarrow \\ f \sin^2 x \neq 3 \Rightarrow \sin^2 x \neq \frac{3}{f} \end{matrix}$$

$$\Rightarrow \sin x \neq \pm \sqrt{\frac{3}{f}} \Rightarrow D_f = \mathbb{R} - \left\{ yk\pi + \frac{\pi}{y}, yk\pi + \frac{2\pi}{y} \right\}$$

90, 180

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الف) $x^2 - 5x + 6 > 0 \Rightarrow \Delta = b^2 - 4ac \Rightarrow (5$

$1 - 5 + 6 = 1 \times$

$(-5)^2 - 4(1)(6) = 1$

$x = \frac{-b \pm \sqrt{\Delta}}{2a}$

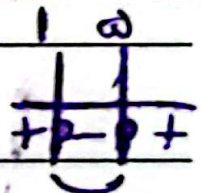
$\frac{5 \pm \sqrt{1}}{2} = \frac{5+1}{2} = 3$
 $\frac{5-1}{2} = 2$



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

ب) $x^2 - 6x + 5 < 0 \Rightarrow x = 1$
 $x = \frac{c}{a} = 5$

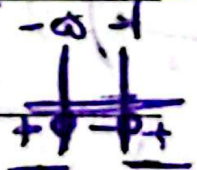
$1 - 6 + 5 = 0$



$(1, 5)$

ج) $x^2 + 9x + 5 > 0 \Rightarrow x = -1$
 $x = -\frac{c}{a} = -5$

$1 + 5 = 6$

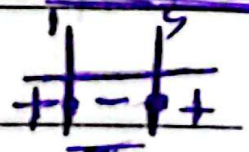


$(-\infty, -5) \cup (-1, +\infty)$

د) $x^2 - 7x + 6 < 0 \Rightarrow x = 1$
 $x = \frac{c}{a} = 6$

اما مراد هشتاد

استان هشتاد $1 - 7 + 6 = 0$



$[1, 6]$

ا) $\frac{x^2 - 3x + 1}{x - 1} < 0 \Rightarrow \begin{cases} 1 + 1 - 3 = 0 \\ x = 1 \end{cases}$ (5)

$x = 1$

$(-\infty, 1) \cup (1, \infty)$

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

$\pm 1 = x$

$1 + 5 - 5 = 0 \Rightarrow \begin{cases} x = 1 \\ x = 5 \end{cases}$

$(-\infty, 1) \cup (5, +\infty)$

ا) $y = \sqrt{\frac{x^2 - 5x + 3}{x^2 - 1}} \Rightarrow \frac{x^2 - 5x + 3}{x^2 - 1} \geq 0$

$1 + 3 - 5 = 0 \Rightarrow \begin{cases} x = 1 \\ x = 3 \end{cases}$

$x = 1$

$\Rightarrow [3, +\infty)$

ب) $y = \sqrt{\frac{x^2 - 4x + 3}{x^2 - 1}} \Rightarrow \frac{x^2 - 4x + 3}{x^2 - 1}$

$x^2 - 1 \neq 0 \Rightarrow x^2 \neq 1 \Rightarrow x \neq \pm 1 \Rightarrow$

$D_f = \mathbb{R} - \{\pm 1\}$

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$$f(x) = \log(x^2 - 3x) \Rightarrow \quad (v)$$

$$x^2 - 3x > 0 \Rightarrow x^2 > 3x \rightarrow x^2 - 3x > 0$$

$$\rightarrow x(x-3) > 0 \quad \begin{matrix} x > 0 \\ x > 3 \end{matrix} \rightarrow D_f = x > 3$$

$$f(x) = \log \frac{16 - x^2}{|x| - 2} \rightarrow \begin{matrix} 16 - x^2 > 0 \rightarrow 4 > x \\ |x| - 2 > 0 \rightarrow |x| > 2 \end{matrix}$$

$$\rightarrow 4 > x \quad -4 < x$$

$$\rightarrow x > 2 \quad x < -2$$

$$\rightarrow x \neq \pm 3$$

$$D_f = (-4, -2) \cup (2, 4)$$

$$- \{ \pm 3 \}$$



$$g(x) = \log \frac{x^2 - 7x + 12}{1 - x} \rightarrow \frac{x^2 - 7x + 12}{x - 3} > 0$$

(ع) امامزاده سید محمد
استان مقدس

$$y = \sqrt{x^2 - 11x + 28} + \log \frac{\sqrt{36 - x^2}}{x} \leq 1$$

$$\underbrace{x^2 - 11x + 28 \geq 0}_{(x-4)(x-7)} \Rightarrow \frac{+}{-} \frac{+}{-} \frac{+}{+}$$

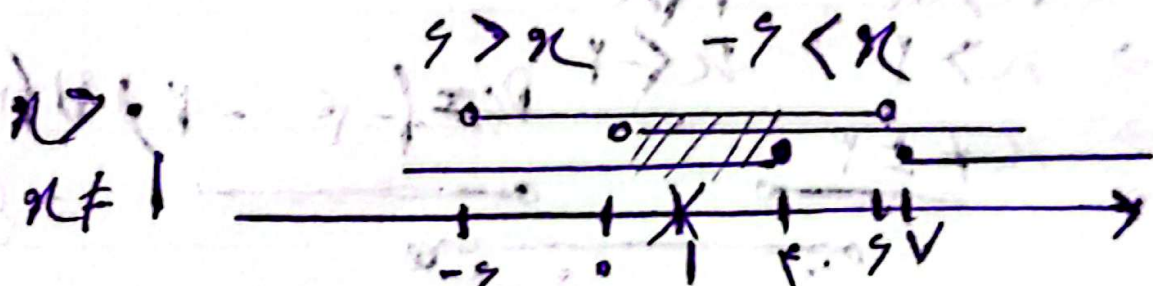
$$(-\infty, 4] \cup [7, +\infty)$$

$$\log \frac{\sqrt{36 - x^2}}{x} \rightarrow$$

$$\sqrt{36 - x^2} > 0 \rightarrow$$

$$36 > x^2 \rightarrow$$

$$36 - x^2 > 0 \rightarrow$$



$$(0, 4] \cup [6, \infty)$$

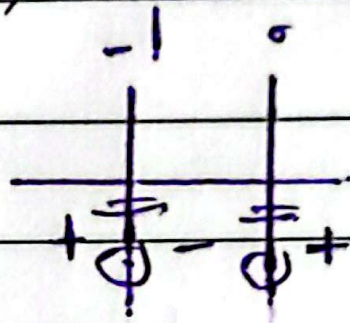
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subject:

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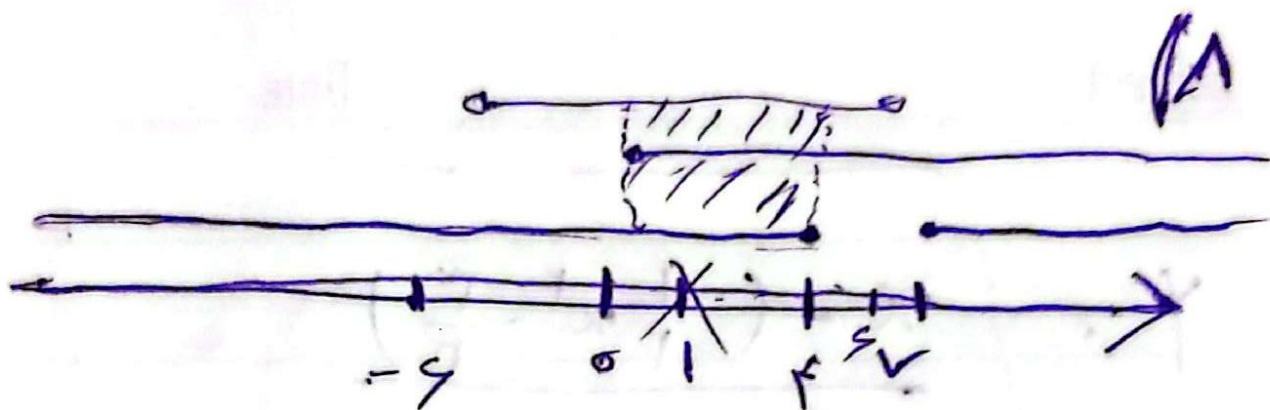
$$y = \frac{x^2 - x}{x^2 + x} \rightarrow x(x+1) \quad (1)$$

	-1	0	
x	-	+	+
$x-1$	-	-	+
$f(x)$	+	-	+



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

استان مقدس امامزاده سید محمد (ع)



$$\{0, r\} - \{1\}$$

$$\frac{1}{r}x^r - \frac{r}{r} = y$$

$$ax^r + bx + c = y$$

$$9a + 3b + c = 3 \quad (1)$$

$$8a + 2b + c = 0 \quad (2)$$

$$a - b + c = -1 \quad (3)$$

$$a - \frac{r}{r} = -1$$

$$a = \frac{1}{r}$$

$$8a + 2b + c = 0 \quad (2)$$

$$\cancel{8a} + 2b + \cancel{c} = \cancel{8a} - 2b + \cancel{c}$$

$$b = 0$$

$$a = -c - 1$$

$$-9c - 9 + 0 + c = 3$$

$$-8c = 12 \Rightarrow c = -\frac{3}{2}$$

subject:

Date: . . .

$$y = \sqrt{\frac{x + \left(\frac{1}{r} x^r - \frac{r}{r} \right)}{\frac{1}{r} x^r - \frac{r}{r}}}$$

$$= \sqrt{\frac{-\frac{1}{r} x^r + x + \frac{r}{r}}{\frac{1}{r} x^r - \frac{r}{r}}}$$

(1.)

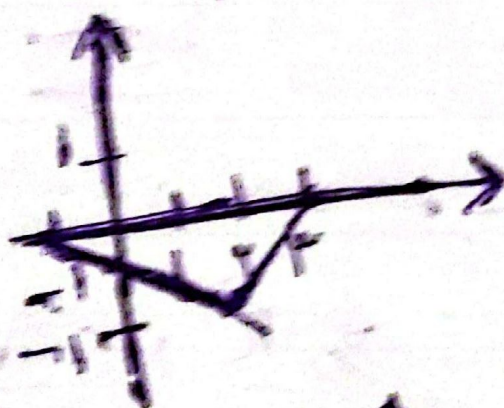
$$f(x) + 1 =$$



$$f(x - 1) =$$



$$-f(x) =$$



$$f(x + 1) + 2$$

