

تکلیف شماره ۶
کمیاب رادی

۱۱

الف) $y = \frac{x+1}{x^2 - 10x^2 + 11x - 10} \rightarrow x = 1$
 $\frac{x^2 - 10x^2 + 11x - 10}{x^2 - 10x^2 + 11x - 10} \cdot \frac{x-1}{x-1}$
 $\frac{x^2 - 10x^2 + 11x - 10}{x^2 - 10x^2 + 11x - 10}$

۱۵، ۲۵

$\frac{-10x^2 + 11x - 10}{+10x^2 - 10x}$
 $+10x - 10$
 $-10x + 10$

$\frac{x+1}{x^2 - 10x^2 + 11x - 10} \rightarrow \frac{(x-\frac{10}{1}) (x-\frac{10}{1})}{x^2 - 10x^2 + 11x - 10}$
 $x = 1 \rightarrow \frac{1}{1} = \frac{1}{1}$
 $x = -10 \rightarrow \frac{-10}{1} = \frac{-10}{1}$

$D_f = \mathbb{R} - \left\{ \frac{10}{1}, \frac{10}{1} \right\} = \mathbb{R} - \left\{ 10, \frac{10}{1} \right\}$

ب) $y = \frac{x+1}{x^2 - x^2 - 11x - 11} \rightarrow x = -1$

$\frac{x^2 - x^2 - 11x - 11}{x^2 - x^2 - 11x - 11} \cdot \frac{x+1}{x+1}$
 $\frac{-11x - 11}{x^2 - x^2 - 11x - 11}$
 $\frac{-11x - 11}{+11x + 11}$
 $-11x - 11$
 $+11x + 11$

$\frac{x+1}{x^2 - 11x - 11}$
 $x^2 - 11x - 11$

$(x-1)(x+11) \rightarrow \begin{cases} x = \frac{11}{1} = 11 \\ x = \frac{1}{11} \end{cases}$
 $\mathbb{R} - \left\{ 1, \frac{1}{11} \right\}$
 $\mathbb{R} - \left\{ 1, 11, \frac{1}{11} \right\}$

الف) $y = \frac{x+1}{x - \sqrt{11-2x}} \rightarrow \mathbb{R}$

$x - \sqrt{11-2x} = 0 \rightarrow 11-2x \geq 0 \rightarrow \frac{11}{2} \geq 2x$
 $x = \sqrt{11-2x} \rightarrow x^2 = 11-2x$
 $x^2 + 2x - 11 = 0 \rightarrow x = \begin{cases} -11 \\ 1 \end{cases}$

۲

$[-\infty, \frac{11}{2}] \cap (\mathbb{R} - \{1\}) \rightarrow$

ب) $y = \frac{x+1}{x - \sqrt{11-2x}} \Rightarrow$

$11-2x \geq 0 \rightarrow x \leq \frac{11}{2}$
 $x = \sqrt{11-2x} \rightarrow x^2 = 11-2x$

$(\mathbb{R} - \{1\}) \cap \left[+\frac{11}{2}, +\infty \right) \rightarrow \begin{cases} x = 11 \rightarrow \checkmark \\ x = 1 \rightarrow \checkmark \end{cases}$

الف) $y = \frac{\sin x}{\cos x - 1} \rightarrow \mathbb{R}$

$\cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{1} \rightarrow \cos x \neq 1$
 $\cos x = 1 \rightarrow x = 0$

۱، ۵

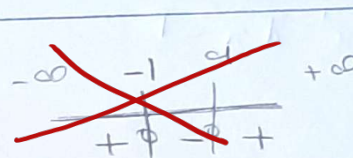
ب) $y = \frac{\cos x + 1}{\sin x + 1}$

$\sin x \neq -1 \rightarrow \sin x \neq \frac{-1}{1} \rightarrow \sin x \neq -1$
 $\mathbb{R} - \left\{ \frac{3\pi}{2}, \frac{7\pi}{2} \right\}$

$\text{ع) } y = \frac{2 \tan x + 1}{\cot x - 1} \rightarrow 2 \tan x = \frac{\sin x}{\cos x}$
 $\{KM + \frac{N}{P}\} \sin x \neq 0$
 $\begin{cases} \cos x \neq 0 \\ \cot x \neq 1 \rightarrow \frac{\cos x}{\sin x} \neq 1 \end{cases}$
 $\mathbb{R} - \{KM + \frac{N}{P}\} \rightarrow \{KM + \frac{N}{P}\} \left\{ KM + \frac{N}{P} \right\}$

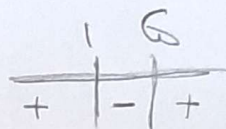
$\rightarrow y = \frac{\sin x + 1}{\sin^2 x - 1} \rightarrow \mathbb{R}$
 $\sin^2 x - 1 \neq 0$
 $\sin^2 x \neq \frac{1}{1}$
 $(\sin x \neq \pm \frac{1}{1}) \rightarrow \sin x \neq \pm \frac{\sqrt{1}}{1}$
 $\mathbb{R} - \{KM + \frac{N}{P} \rightarrow KM + \frac{N}{P}\}$

$\text{الف) } x^2 - 6x + 4 \geq 0$
 $(x-4)(x+1) \rightarrow \begin{cases} x=4 \\ x=-1 \end{cases}$
 $(4, +\infty) \cup (-\infty, -1)$

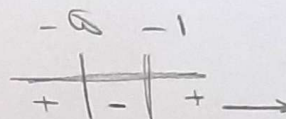


110-4

$\text{ب) } x^2 - 4x + 6 < 0$
 $(x-2)(x-1) \rightarrow \begin{cases} x=2 \\ x=1 \end{cases}$
 $(1, 2)$



$\text{ج) } x^2 + 4x + 6 \geq 0$
 $(x+2)(x+1) \rightarrow \begin{cases} x=-2 \\ x=-1 \end{cases}$

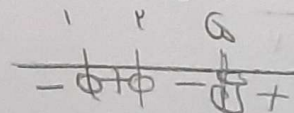


$[-1, +\infty) \cup (-\infty, -2]$

$\text{د) } x^2 - 7x + 4 \leq 0$
 $(x-4)(x-1) \rightarrow \begin{cases} x=4 \\ x=1 \end{cases}$



$\text{الف) } x^2 - 3x + 1 < 0$
 $(x-3)(x-1) \rightarrow \begin{cases} x=3 \\ x=1 \end{cases}$
 $x-3 \rightarrow x=3$



$(-\infty, 1) \cup (3, +\infty)$

$\text{ب) } x^2 - 1 \geq 0$

$x^2 - 4x + 6 \rightarrow (x-2)(x-1) \rightarrow x = \begin{cases} 2 \\ 1 \end{cases}$
 $(2, +\infty) \cup (-1, 1)$

1-5

الف $g = \sqrt{\frac{x^2 - 5x + 4}{x^2 - 1}}$

$$x^k - 1 \neq 0 \rightarrow x^k \neq 1$$

$$\frac{(x-1)(x-1)}{x^n - 1} \geq 0$$

~~$$\frac{x \neq 1}{x}$$~~

~~$(-\infty, 1) \cup [1, +\infty)$~~

$$\frac{1}{d} = \sqrt{\frac{x^2 + x + 1}{x^2 - 1}}$$

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

$$R = \{+1, 0, -1\}$$

$$y = \log(x^2 - 3x) \quad \text{و الحاف } 0, \infty$$

$$(-\infty, 0] \cup [1, +\infty)$$

$$x^2 - 11x + 30 \rightarrow (x-5)(x-6) \rightarrow \text{so } \mu = x$$

$$\rightarrow y = \log_{|x|-4}$$

$$\begin{cases} |x| - r > 0 \rightarrow |x| > r \rightarrow x > r \vee x < -r \\ |x| - r < 0 \rightarrow |x| < r \rightarrow x < r \wedge x > -r \\ |x| - r \neq 0 \rightarrow |x| \neq r \rightarrow x \neq \pm r \end{cases}$$

$$D_{x^2} = \{c - \frac{1}{2}, -\frac{1}{2}\} \cap \{c, \frac{1}{2}\} = \{c - \frac{1}{2}\}$$

$$2) g = \log \frac{x^2 + \sqrt{x^2 - 1}}{x - 1}$$

$$\begin{aligned} \frac{x-1}{x-1} &\rightarrow x-1 > 0 \rightarrow x > 1 \\ 1-x &\neq 1 \rightarrow 4 \neq x \\ 1-x &\neq 0 \rightarrow 1 \neq x \end{aligned}$$

$$D_f = (F_0 |_0) - \{9\} \sqrt{\frac{10 - x^2}{x}}$$

$$(x - E) (x - V) = x^2 - (E + V)x + EV$$

$$\left\{ \begin{array}{l} \text{Hcl} - x \geq 0 \\ x \geq 0 \\ x \neq 1 \end{array} \right. \rightarrow \text{Hcl} - x \geq 0 \rightarrow +q > x > -q$$

~~$$(-\infty, 15] \cup [17, +\infty) \rightarrow U = \emptyset$$~~

~~$(-\infty, 9) \cup (V_5 + \infty) \cup (0, 9) = \{1\}$~~

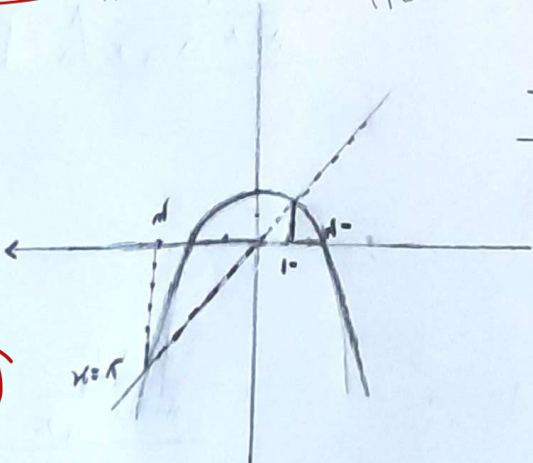
$$y = \frac{n^r - n}{n^r + n} \rightarrow \frac{n(n-1)}{n(n+1)} \rightarrow \frac{n-1}{n+1}$$

5

[illegible]

$$y = \sqrt{x - f(m)}$$

$x - f(m)$	$+$	$+$	$+$	$+$	$+$
$x - f(m)$	$+$	$+$	$+$	$+$	$+$
$x - f(m)$	$+$	$+$	$+$	$+$	$+$
$x - f(m)$	$+$	$+$	$+$	$+$	$+$
$x - f(m)$	$+$	$+$	$+$	$+$	$+$



~~$$CH_2 + CH_3 - C - H - O - 1$$~~

1/3

9

