

نام و نام خانوادگی: علی - کریمی

پاسخنامه تشریحی تکلیف شماره کلاس A

(*) $\frac{y(x)'}{x^2} = \frac{x-1}{x^2} - \frac{(x+1)}{x^2}$
 $\frac{y(x)'}{x^2} = \frac{x-1-x-1}{x^2} = \frac{-2}{x^2}$
 $y(x)' = -\frac{2}{x}$
 $y(x) = -2 \ln|x| + C$

$$\sqrt{3-2x} \rightarrow 3-2x \geq 0 \rightarrow 3 \geq 2x \rightarrow 2x \leq 3 \rightarrow x \leq \frac{3}{2}$$

$$P_f = \{x | x \leq \frac{\mu}{F}\} \quad (-) \quad \sqrt{\mu x - \mu} \rightarrow \mu x - \mu \geq 0 \rightarrow \mu x \geq \mu \rightarrow x \geq \frac{\mu}{F}$$

$$x - \sqrt{r}x - 1 \neq 0 \rightarrow x^r = \sqrt{r}x - 1 \rightarrow x^{r-r}x = -1 \rightarrow x(x-r) = -1 \rightarrow 1, 1$$

$$\frac{x^p - x + 1}{x^p - 1} \rightsquigarrow x^p - 1 \rightsquigarrow \pm 1, -1 \quad R = \{\pm 1\}$$

$$\text{الف) } x^3 - 3x > 0 \rightarrow x(x-3) > 0 \quad \frac{0}{+|-|+} \rightarrow \begin{matrix} (-\infty, 0) \cup (3, +\infty) \\ \text{---} R-[0, 3] \end{matrix}$$

$\neg) 19 - x \geq 0 \rightarrow x < 1, |x| - 1 \geq 0 \rightarrow |x| \geq 1$
 $(1, 1] \cup (-\infty, -1)$

$$f(x) = \frac{x^2 - 2x + 1}{x^2 - 1} = \frac{(x-1)^2}{(x-1)(x+1)} = \frac{x-1}{x+1}$$

$$f(x) = \frac{x-1}{x+1} > 0 \Rightarrow \frac{x-1}{x+1} > 0 \Rightarrow (x-1)(x+1) > 0$$

$$(x-1)(x+1) > 0 \Rightarrow x < -1 \text{ or } x > 1$$

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

$$y) \sqrt{x^2 - 11x + 18} + \log x \rightarrow \frac{\sqrt{14x - 21}}{+(-1) + \sqrt{14x - 21}} \sim R - (\varepsilon N) \rightarrow (0, \varepsilon) \cup (\varepsilon, 4)$$

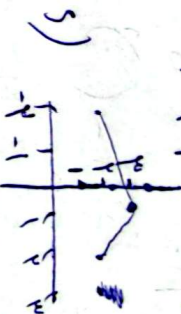
$$y = \frac{x^r - x}{x^r + x}$$

$$\begin{array}{r} \text{+} \quad \text{+} \quad \text{+} \quad \text{+} \quad \text{+} \\ \hline \text{+} \quad \text{+} \quad \text{+} \quad \text{+} \quad \text{+} \end{array}$$

$x=0 \rightarrow$ ~~میشود~~
 $x > 0 \rightarrow$ ~~میشود~~
 $x < 0 \rightarrow$ ~~میشود~~
 $x = +1 \rightarrow$ ~~میشود~~
 $x > -1 \rightarrow$ ~~میشود~~
 $x < +1 \rightarrow$ ~~میشود~~
 $0 < x < 1 \rightarrow$ ~~میشود~~
 $x = 0 \rightarrow$ ~~میشود~~
 $x = +1 \rightarrow$ ~~میشود~~

$$g = \sqrt{\frac{x - f(x)}{f(x)}} \rightsquigarrow x = f(x) \rightsquigarrow y_3 = 1$$

$$\frac{-y}{-x + 1} \frac{y}{-x + 1} \rightsquigarrow \{(-y, -1] \cup (x, y)\}$$



$$f(x) = \sqrt{x^2 - 1} \quad x \rightarrow x^2 - 1 \geq 0 \quad x \in (-\infty, -1] \cup [1, \infty)$$

$f(x) = \sqrt{x} \sqrt{x+1}$ → $x \geq 0, x+1 \geq 0 \rightarrow x \geq 0 \rightarrow x \geq 0$
 $\rightarrow [0, \infty)$
 $0 \leq x \leq 1 \rightarrow x \geq 0, -1 \leq x \leq 1$

$$f(x) = \left[\sqrt{x} - \left[\sqrt{x} \right] \right] \rightarrow x \neq 0 \rightarrow [0, +\infty)$$

$$g(x) = \sqrt{x-1} \rightarrow x \geq 0 \rightarrow [0, +\infty)$$

$$ii) f(x) = \sqrt{\underbrace{x|x|}_{x \geq 0}}, \quad g(x) = \underbrace{x}_R \rightarrow X$$

$$\therefore f(x) = \underbrace{\frac{x}{|x|}}_{R - \{0\}}, \quad g(x) = \underbrace{\frac{|x|}{x}}_{R - \{0\}} \rightarrow \checkmark$$