

نام و نام خانوادگی:
 پاسخنامه تشریحی تکلیف شماره ۳۰۰ کلاس ۱۳۰۰
 ۱۹۵۵

۱) $\frac{2x^3 + 3x^2 - 14x + 12}{x-1} = 2x^2 + 5x - 12$ $\leftarrow$ روش روسی $\leftarrow$ روش روسی

$D_f = \mathbb{R} - \left\{ \frac{1}{2}, 3, 4 \right\}$

۲) $\frac{2x^3 + 9x^2 + 10x + 4}{x+1} = 2x^2 + 7x + 4$

$D_f = \mathbb{R} - \left\{ -\frac{1}{2}, -\frac{1}{3}, -\frac{1}{4} \right\}$

۱) $\frac{x^3 - 2x^2 + 2x + 1}{x-1} = x^2 - x + 1$

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

۲) $\frac{x^3 - 2x^2 + 2x - 1}{x-1} = x^2 - x + 1$

$D_f = \mathbb{R} - \{1, 2, 3\}$

مخرج تابع نباید صفر باشد: $x-1 > 0$ و $x-1 < 0$ باید در نظرمانی که عم!

I) $x-1 > 0 \rightarrow x > 1 \rightarrow x^2 - 5x + 5 - 2x + 5 \rightarrow x^2 - 7x + 10 \rightarrow (x-2)(x-5)$

II) $x-1 < 0 \rightarrow x < 1 \rightarrow x^2 + 5x - 6 - 2x + 5 \rightarrow x^2 + 3x - 1 \rightarrow x(x+3)$

$D_f = \mathbb{R} - \{0, 2, 5, 3\}$

۱) $[x] - 2 \geq 0$

$[x] \geq 2$

$D_f = (-\infty, -2]$

۲) $[x] - 2 \geq 0$

$[x] \geq 2$

$D_f = \mathbb{R} - \{2, 3, 4\}$

۱) $\sqrt{x - \frac{1}{x}} + \sqrt{x - \frac{1}{x}} \geq 0$

$[-(x - \frac{1}{x})]$

$\{ a \in \mathbb{Z} \rightarrow 0$
 $a \notin \mathbb{Z} \rightarrow -1$

۲) $\sqrt{x - \frac{1}{x}} + \sqrt{x - \frac{1}{x}} \geq 0$

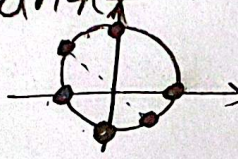
$[x + \frac{2}{x}] - 14[x + \frac{2}{x}]$

$2[x + \frac{2}{x}] \geq 1$ $x + \frac{2}{x} \geq 1$

$[x + \frac{2}{x}] \geq \frac{1}{2}$ $x \geq \frac{1}{2}$

$D_f = \{x | x = k + \frac{1}{2}, k \in \mathbb{Z}\}$

$D_f = [\frac{1}{2}, +\infty)$

و) $\sin \alpha \neq 0$ $\cos \alpha \neq 0$ $\tan \alpha \neq -1$  $Df = \mathbb{R} - \left\{ \frac{k\pi}{2}, k\pi - \frac{\pi}{4} \right\}$	$\Rightarrow 1 - \epsilon \sin \alpha \geq 0$ $\sin \alpha \leq \frac{1}{\epsilon}$ $-\frac{1}{\epsilon} \leq \sin \alpha \leq \frac{1}{\epsilon} \rightarrow Df$ $Df = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$	6
و) $ \sin \alpha - 1 \geq 0$ $\sin \alpha \geq \frac{1}{\epsilon}$ $Df = \left[\frac{\pi}{2}, \frac{5\pi}{2} \right]$	$\Rightarrow 1 - \epsilon \cos \alpha \geq 0$ $\cos \alpha \leq \frac{1}{\epsilon}$ $Df = \left[\frac{\pi}{2}, \frac{3\pi}{2} \right]$	7
و) $1 \leq \alpha^2 + 3\alpha + 1 \leq 1$ I) $\alpha^2 + 3\alpha + 1 \leq 1 \rightarrow \alpha^2 + 3\alpha \leq 0$ $\alpha(\alpha + 3) \leq 0$ $\alpha \in [-3, 0]$ II) $\alpha^2 + 3\alpha + 1 \geq 1 \rightarrow \alpha^2 + 3\alpha \geq 0$ $\alpha(\alpha + 3) \geq 0$ $\alpha \in (-\infty, -3] \cup [0, \infty)$ $Df = [-3, 0] \cup [0, \infty)$	$\Rightarrow 1 \leq \omega - 2\alpha \leq 1$ $\omega - 2\alpha \leq 1$ $2\alpha \geq \omega - 1$ $\alpha \geq \frac{\omega - 1}{2}$ $\omega - 2\alpha \geq 0 \rightarrow 2\alpha \leq \omega \rightarrow \alpha \leq \frac{\omega}{2}$ $Df = \left[\frac{\omega - 1}{2}, \frac{\omega}{2} \right]$	8
و) $\alpha > 0$ $Df = (0, \infty)$ $1 - \log_{\frac{1}{\epsilon}} \alpha > 0$ $\log_{\frac{1}{\epsilon}} \alpha < 1 \rightarrow \alpha < \frac{1}{\epsilon}$	$\Rightarrow \alpha > 0$ $1 - \log_{\frac{1}{\epsilon}} \alpha > 0$ $\log_{\frac{1}{\epsilon}} \alpha < 1 \rightarrow \alpha < \frac{1}{\epsilon}$ $(0, \frac{1}{\epsilon})$	9
و) $\frac{r^{\alpha} - 2r^{\beta}}{r^{\alpha} - r^{\beta}} > 0$ $\frac{r^{\alpha} - r^{\beta}}{r^{\alpha} - r^{\beta}} \geq 1 \rightarrow r^{\alpha} - r^{\beta} \geq r^{\alpha} - r^{\beta}$ $(\alpha - 1)(\alpha - \beta) \leq 0$ $Df = [1, \beta]$	$\Rightarrow \frac{r^{\alpha} + \omega}{r^{\alpha} + \epsilon} \in \omega$ $r^{\alpha} \omega + \epsilon \omega = r^{\alpha} + \omega$ $\epsilon \omega - \omega = r^{\alpha} - r^{\alpha} \omega$ $\epsilon \omega - \omega = \alpha(r - r\omega)$ $\frac{\epsilon \omega - \omega}{r - r\omega} = \alpha$	10

$$\frac{\epsilon \omega - \omega}{r - r\omega} = \alpha \Rightarrow \alpha = \frac{\epsilon \omega - \omega}{r - r\omega} \Rightarrow \alpha \in \omega$$

DR