

نام و نام خانوادگی .....  
 پاسخنامه تشریحی تکلیف شماره ۱۳۰۰ کلاس .....  
 خوب نوشتی دبی سوال ۲ بی دقتی کمتری زیاده  
 ۱۸/۵ راه حل های نه نوشتی با دقت صدانه شود!

$$\frac{2x^2 + 9x + 10}{x^2 + 5x + 6} \Big/ \frac{x+1}{x^2 + 5x + 6}$$

$$x_1 = \frac{-5-2}{1} = -7 \quad \Delta = 25$$

$$x_2 = \frac{-5+2}{1} = -3$$

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

$$D_f = \mathbb{R} - \left\{ -\frac{1}{2}, -1 \right\} \quad \frac{2x^2 + 9x + 10}{x^2 + 5x + 6} \Big/ \frac{x+1}{x^2 + 5x + 6}$$

$$2x^2 + 5x - 3 = 0 \rightarrow \Delta = 49$$

$$x_1 = \frac{-5-7}{2} = -6$$

$$x_2 = \frac{-5+7}{2} = 1$$

$$\frac{x^2 - 2x^2 + 2x - 1}{x^2 + x + 1} \Big/ \frac{x-1}{x^2 + x + 1}$$

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

$$x+3=0$$

$$x=-3$$

$$x-1=0$$

$$x=1$$

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

$$\frac{x^2 - 2x^2 + 2x - 1}{x^2 + x + 1} \Big/ \frac{x-1}{x^2 + x + 1}$$

$$x-1=0$$

$$x=1$$

$$\Delta = 1-4 = -3$$

$$\Delta = 1-4 = -3$$

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

$$x^2 - 2(x-1) - 2x + 2 \neq 0$$

$$x^2 - 2(x-1) - 2x + 2 \neq 0$$

$$x^2 - 2x + 2 - 2x + 2 \neq 0$$

$$x^2 - 4x + 4 \neq 0$$

$$(x-2)^2 \neq 0 \rightarrow x \neq 2$$

$$x^2 - 2(-x+1) - 2x + 2 \neq 0$$

$$x^2 + 2x - 2 - 2x + 2 \neq 0$$

$$x^2 + 2x \neq 0$$

$$x(x+2) \neq 0 \quad x=0 \quad x=-2$$

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

$$5x^2 + 4 \geq 0 \rightarrow \text{همیشه مثبت}$$

$$[x]^2 - 2[x] - 3 \geq 0$$

$$x^2 - 2x - 3 = 0 \rightarrow \Delta = 4 - 4(1)(-3) = 16$$

$$x = \frac{2 \pm 4}{2} = 3$$

$$x = \frac{2-4}{2} = -1$$

$$\frac{x-1}{x+1} \Big/ \frac{x-1}{x+1}$$

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

$$[-x] - 2 \geq 0$$

$$-x - 2 \geq 0$$

$$-x \geq 2 \rightarrow x \leq -2$$

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

$$\left[ x - \frac{1}{x} \right] + \left[ \frac{1}{x} - x \right] \Rightarrow x - \frac{1}{x} = x$$

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

$$[a] + [-a] \Rightarrow a \in \mathbb{Z} \rightarrow 0$$

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

$$x - \frac{1}{x} \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{x}$$

$$\left[ x - \frac{1}{x} \right] + \left[ x + \frac{1}{x} \right] \geq 0$$

$$x - \frac{1}{x} \geq 0 \rightarrow x \geq \frac{1}{x}$$

$$x + \frac{1}{x} \geq 0 \rightarrow x \geq -\frac{1}{x}$$

$$D_f = \left[ \frac{1}{x}, +\infty \right)$$

$$n \neq k\pi - \frac{\pi}{2}, n \neq k\pi + \frac{\pi}{2}$$

$$1 - r \sin^2 \alpha > 0$$

$$-r \sin^2 \alpha \geq 1$$

$$r \sin^2 \alpha < 1$$

$$\sin^2 \alpha \leq \frac{1}{r}$$

$$-\frac{1}{r} \leq \sin \alpha \leq \frac{1}{r}$$


در این ناحیه  
رست!

$$D_f = \left[ r k \pi + \frac{\pi}{4}, r k \pi + \frac{3\pi}{4} \right] \cup \left[ r k \pi + \frac{5\pi}{4}, r k \pi + \frac{7\pi}{4} \right]$$

$$\frac{\cos^2}{\tan} + \frac{1}{1} = \frac{\cos^2}{\frac{\sin}{\cos}} + 1 = \frac{\cos^3}{\sin^2} + 1$$

با  $\tan$  باید مرتب شود

$$\frac{\cos^2}{\sin^2} + 1 = \frac{\cos^2 + \sin^2}{\sin^2} = \frac{1}{\sin^2}$$

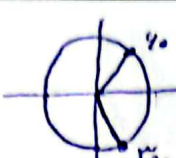
$$\sin^2 \neq 0$$

$$D_f = \mathbb{R} - \{k\pi\}$$


$$1 - r \cos \alpha \geq 0$$

$$r \cos \alpha \leq 1$$

$$\cos \alpha \leq \frac{1}{r}$$

$$D_f = \left[ r k \pi + \frac{\pi}{r}, r k \pi + \frac{2\pi}{r} \right]$$


$$r \sin \alpha - 1 \geq 0$$

$$r \sin \alpha \geq 1$$

$$\sin \alpha \geq \frac{1}{r}$$


$$D_f = \left[ r k \pi + \frac{\pi}{4}, r k \pi + \frac{3\pi}{4} \right]$$

$$D_f = [-r, -r] \cup [-1, 0]$$

$$-1 \leq \sqrt{\alpha - r\alpha} \leq 1$$

$$\alpha - r\alpha \geq 0$$

$$r\alpha \leq \alpha$$

$$\alpha \leq r/\alpha$$

$$\alpha - r\alpha \leq 1$$

$$-r\alpha \leq -\alpha$$

$$r\alpha \geq \alpha$$

$$\alpha \geq r$$

$$D_f = [r, r/\alpha]$$

$$\alpha r + r\alpha + 1 \leq 1$$

$$\alpha r + r\alpha \leq 0$$

$$\alpha(r + r) \leq 0$$

$$\alpha = 0 \quad \alpha = -r$$

$$-\frac{r}{r} \leq \alpha \leq \frac{r}{r}$$

$$-1 \leq \alpha \leq 1$$

$$D_f = [-1, 1]$$

$$-1 \leq \alpha r + r\alpha + 1 \leq 1$$

$$\alpha r + r\alpha + 1 \geq -1$$

$$\alpha r + r\alpha + 2 \geq 0$$

$$(\alpha + 1)(\alpha + r) \geq 0$$

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

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

$$\log_r \frac{1 - \log_r \alpha}{r}$$

$$\alpha > 0$$

$$1 - \log_r \alpha > 0$$

$$\log_r \frac{1}{r} < 1$$

$$\alpha < \frac{1}{r}$$

$$D_f = \left( \frac{1}{r}, +\infty \right)$$

$$\log_r \left( \frac{1 - \log_r \alpha}{r} \right)$$

$$\alpha > 0$$

$$1 - \log_r \alpha > 0$$

$$\log_r \alpha < 1$$

$$\alpha < r$$

$$D_f = (0, r)$$

$$\left( \frac{r\alpha + d}{r\alpha + r} \right)! \rightarrow \frac{r\alpha + d}{r\alpha + r} \in \mathbb{W}$$

$$r\alpha + d = r\alpha w + \epsilon w$$

$$r\alpha - r\alpha w = \epsilon w - d$$

$$\alpha(r - rw) = \epsilon w - d$$

$$\alpha = \frac{\epsilon w - d}{r - rw}$$

$$D_f = \left\{ \alpha \mid \alpha = \frac{\epsilon w - d}{r - rw} \right\}$$

$$r^{\alpha} - \alpha^r$$

$$- \lambda \geq 0$$

$$r^{\alpha} - \alpha^r \geq \lambda$$

$$r^{\alpha} - \alpha^r \geq r$$

$$- \alpha^r + r\alpha - r \geq 0$$

$$\alpha^r - r\alpha + r \leq 0$$

$$(r-1)(r-\alpha) \leq 0$$

$$D_f = [1, r]$$

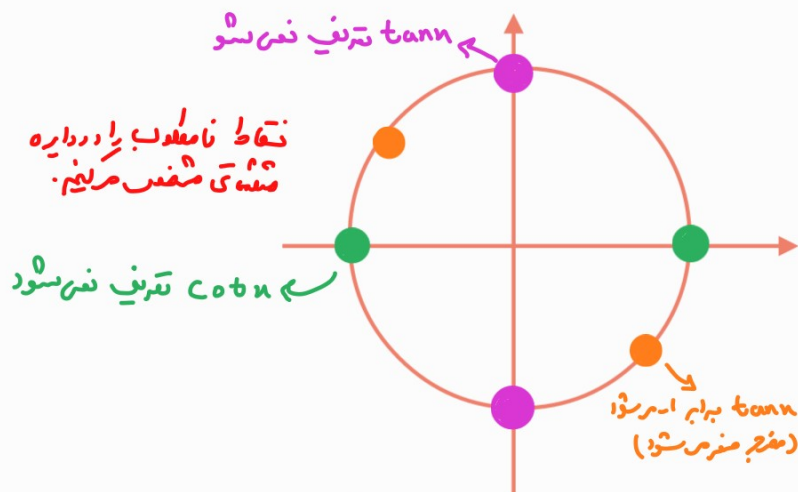
الف)  $y = \frac{\cot x + 1}{\tan x + 1}$

$x \neq k\pi + \frac{\pi}{2}$

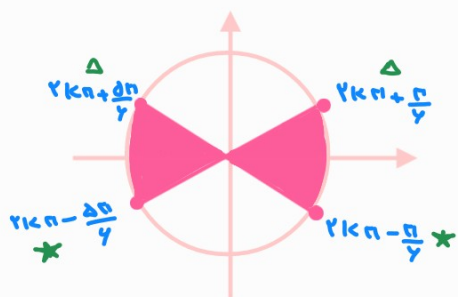
$x \neq k\pi + \frac{\pi}{4} \cup x \neq k\pi$

$\hookrightarrow x \neq \frac{k\pi}{4}$

$\rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, k\pi + \frac{\pi}{2} \right\}$



ب)  $1 - \sqrt{\sin x} \geq 0 \rightarrow \sqrt{\sin x} \leq 1 \rightarrow \sin x \leq \frac{1}{4} \rightarrow -\frac{1}{4} \leq \sin x \leq \frac{1}{4}$



$\rightarrow D_f = \left[ k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4} \right]$