

نام و نام خانوادگی شماره کلاس بازهم دفترچه A

الف) $\frac{x+3}{2x^2+3x^2-11x+3} \neq 0$	$\frac{2x^2+3x^2-11x+3}{2x^2+3x^2-11x+3} \left \frac{x-1}{2x^2+3x^2-11x+3} = x^2+8x-9 - \frac{(x-1)}{2} \right.$ $\frac{\Delta x^2 - 11x + 3}{-2x^2 + 3x^2 - 11x + 3}$ $\frac{(x-1)}{(x-1)} D_f = R - \left[\frac{1}{2}, 1, 3 \right]$	$(x+3)$ $x = \frac{1}{2}$ 1
ب) $\frac{x+3}{2x^2+9x^2+11x+3} \neq 0$	$\frac{2x^2+9x^2+11x+3}{2x^2+9x^2+11x+3} \left \frac{x+1}{2x^2+9x^2+11x+3} = \frac{(x+1)(2x^2+7x+3)}{(x^2+9x+4)} \right.$ $\frac{2x^2+9x^2+11x+3}{-2x^2+9x^2+11x+3}$ $\frac{(x+1)}{(x+1)} D_f = R - \left[-1, -\frac{1}{2}, -3 \right]$ $x = -\frac{1}{2}$	$(x+4)(x+1)$ $x = -\frac{1}{2}$
الف) $\frac{x+3}{x^2-2x^2+2x-1} \neq 0$	$\frac{x^2-2x^2+2x-1}{x^2-2x^2+2x-1} \left \frac{x-1}{x^2-2x^2+2x-1} = \frac{(x-1)(x^2-x+1)}{1-x(1)(1)} \right.$ $\frac{x^2-2x^2+2x-1}{-x^2+2x-1}$ $\frac{(x-1)}{(x-1)} D_f = R - [1]$	$x = -1$ 2
ب) $\frac{x+3}{x^2-2x^2+2x-1}$	$\frac{x-1}{x-1} \left \frac{x+3}{x^2-2x^2+2x-1} = \frac{(x+3)(x^2-x+1)}{x^2-2x^2+2x-1} \right.$ $\frac{x-1}{x-1} D_f = R - (-2, 1]$	
2	$x=1 \Rightarrow x^2-2x+\Delta = 0$ $1-2+\Delta \neq 0 \Rightarrow \Delta = 1$ $D_f = R - [2, \Delta, 0, -3]$	3
$x > 1 \rightarrow x^2 - \Delta x + \Delta - 2x + \Delta = 0 \Rightarrow x^2 - 5x + 2\Delta = 0$	$x^2 - 5x + 2\Delta = 0 \Rightarrow (x-2)(x-1) = 0$ $x = 2$ $x = 1$	
$x < 1 \rightarrow x^2 + \Delta x - \Delta - 2x + \Delta = 0 \Rightarrow x^2 + 3x = 0$	$x(x+3) = 0 \Rightarrow x = 0$ $x = -3$	
الف) $\sqrt{-x} - 2 \Rightarrow [-x] - 2 \geq 0 \Rightarrow [-x] \geq 2 \Rightarrow D_f \in (-\infty, -2]$		
ب) $\frac{\Delta x^2 + 4}{[x] - 2[x] - 2} \neq 0$	$([x] - 2)([x] + 1) \Rightarrow [x] = 2$ $[x] = -1$ $D_f = R - [-1, 0) \cup [2, 3)$	4
الف) $\left[x - \frac{1}{2} \right] + \left[x + \frac{1}{2} \right] \geq 0$	$\left[x - \frac{1}{2} \right] + \left[x + \frac{1}{2} \right] \geq 0 \Rightarrow D = \left\{ \frac{1}{2}, +\infty \right\}$	5
ب) $\left[x - \frac{1}{2} \right] + \left[\frac{1}{2} - x \right] \geq 0$	$\left[x - \frac{1}{2} \right] + \left[\frac{1}{2} - x \right] \geq 0 \Rightarrow D_f = \{ k \in \mathbb{Z} \}$	5
$x - \frac{1}{2} = t \Rightarrow [t] + [-t] \geq 0$	$[t] + [-t] \geq 0 \Rightarrow t \in \mathbb{Z}$	

$$\frac{\cos x}{\sin x}$$

الف) $y = \frac{\cot x + 1}{\tan x + 1} \Rightarrow \cot x = \frac{1}{\tan x} = \tan\left(\frac{\pi}{2} - x\right) \Rightarrow \tan x = \tan\left(\frac{\pi}{2} - x\right) \Rightarrow x = \frac{\pi}{4} + k\pi$
 $\tan x + 1 \neq 0 \Rightarrow \tan x \neq -1 \Rightarrow \tan x = 1 \Rightarrow x = \frac{\pi}{4} + k\pi$
 $D_{(f)} = \left\{ k\pi + \frac{\pi}{4} \right\} \cup \left\{ k\pi + \frac{3\pi}{4} \right\}$

ب) $\sqrt{1 - \sin^2 x} \Rightarrow 1 - \sin^2 x \geq 0 \Rightarrow \sin^2 x \leq 1 \Rightarrow \sin x \in [-1, 1]$
 $D_{(f)} = \left[k\pi - \frac{\pi}{2}, k\pi + \frac{\pi}{2} \right]$

الف) $\sqrt{\sin x} \Rightarrow \sin x \geq 0 \Rightarrow \sin x \in [0, 1] \Rightarrow x \in [0, \frac{\pi}{2}] + 2k\pi$
 $D_{(f)} = \left[k\pi, k\pi + \frac{\pi}{2} \right]$

ب) $\sqrt{1 - \cos x} \Rightarrow 1 - \cos x \geq 0 \Rightarrow \cos x \leq 1 \Rightarrow \cos x \in [-1, 1] \Rightarrow x \in [0, \pi] + 2k\pi$
 $D_{(f)} = \left[k\pi, k\pi + \pi \right]$

الف) $y = \arcsin(x^2 + 2x + 1) \Rightarrow -1 \leq x^2 + 2x + 1 \leq 1$
 $\begin{cases} x^2 + 2x + 1 \leq 1 \Rightarrow x^2 + 2x \leq 0 \Rightarrow x(x+2) \leq 0 \Rightarrow x \in [-2, 0] \\ x^2 + 2x + 1 \geq -1 \Rightarrow x^2 + 2x + 2 \geq 0 \Rightarrow (x+1)^2 + 1 \geq 0 \Rightarrow x \in \mathbb{R} \end{cases}$
 $D_{(f)} = [-2, 0]$

الف) $y = \log_r(1 - \log_r x) \Rightarrow 1 - \log_r x > 0 \Rightarrow \log_r x < 1 \Rightarrow x < r \Rightarrow D_{(f)} = (0, r)$

ب) $\log_r \left(\frac{1 - \log_r x}{x} \right) \Rightarrow \frac{1 - \log_r x}{x} > 0 \Rightarrow 1 - \log_r x > 0 \Rightarrow \log_r x < 1 \Rightarrow x < r \Rightarrow D_{(f)} = (0, r)$

الف) $\sqrt[r]{x - x^r} \Rightarrow x - x^r \geq 0 \Rightarrow x(1 - x^{r-1}) \geq 0 \Rightarrow x \in [0, 1]$
 $D_{(f)} = [0, 1]$

ب) $\left(\frac{r!x + \alpha}{r!x + \beta} \right)! \in W \Rightarrow D_{(f)} = \left\{ x \mid x = \frac{-\beta k + \alpha}{r!k - r}, k \in W \right\}$