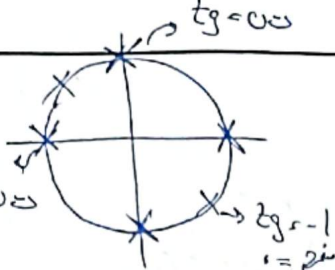
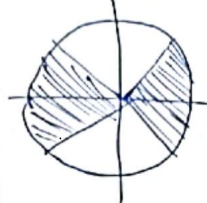


$y = \frac{x+3}{(x-1)(2x^2+5x-2)}$ $= \frac{x+3}{(x-1)(x+3)(2x-1)} \quad D_f = R - \{-3, \frac{1}{2}, 1\}$	$y = \frac{x+3}{(2x^2+5x+2)(x+1)} = \frac{x+3}{(x+1)(x+\frac{1}{2})(x+3)}$ $D_f = R - \{-1, -\frac{1}{2}, -3\}$	1
$y = \frac{x+3}{(x-1)(x^2-x+1)} \quad D_f = R - \{1\}$ ریشه نام دارد	$\frac{x+3}{(x^2-x+1)(x-1)} \cdot \frac{-5}{+1 - 0 +}$ $D_f = R - \{-5, 1\}$	2
$D_f = R - \{ \text{معامل مقلوبه منجم} \} \Rightarrow x^2 - 5 x-1 - 2x + 5$ I) $x > 1 \rightarrow x^2 - 5x + 1 = 0 \rightarrow x = 2, 5$ II) $x < 1 \rightarrow x^2 + 2x \Rightarrow x = -5, 0$ $D_f = R - \{2, 0, 5, -5\}$		3
2) $[-x] - 2 \geq 0 \rightarrow [-x] \geq 2$ $-x \geq 2$ $x \leq -2 \quad D_f = (-\infty, -2]$	$\begin{cases} [x] = t \rightarrow t^2 - 2t - 5 \neq 0 \\ (t+1)(t-3) \neq 0 \quad t \neq -1, 3 \\ [x] \neq 3 \rightarrow x \notin [3, 4) \\ [x] \neq -1 \rightarrow x \notin [-1, 0) \\ D_f = R - [1, 0) \cup [3, 4) \end{cases}$	4
$[x - \frac{1}{4}] + [x + \frac{1}{4}] \geq 1 \xrightarrow{+} [x - \frac{1}{4}] + 1 + [x + \frac{1}{4}]$ $[x + \frac{1}{4}] + [x + \frac{1}{4}] \geq 1 \rightarrow [x + \frac{1}{4}] \geq \frac{1}{2}$ باید صبح باشد، یعنی $x + \frac{1}{4} \geq 1$ $x \geq \frac{3}{4} \rightarrow D_f = [\frac{3}{4}, \infty)$	$[x] + [-x] \rightarrow x \in \mathbb{Z} \checkmark$ $x \notin \mathbb{Z} \times$ مثلاً $[x - \frac{1}{4}] \in \mathbb{Z} \rightarrow x \in \mathbb{Z} + \frac{1}{4}$ $D_f = \{x \mid x = f + \frac{1}{4} \text{ و } f \in \mathbb{Z}\}$ فیک مقبول	5

الف) $\frac{\cos x + 1}{\tan x + 1}$  $x \neq k\pi + \frac{\pi}{2}$ $x \neq k\pi + \frac{\pi}{4} \cup x \neq k\pi, x \neq \frac{3\pi}{4}$ $D_f = \mathbb{R} - \{k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4}\}$	$1 - \sqrt{2} \cos x \geq 0 \rightarrow -\frac{1}{\sqrt{2}} \leq \cos x \leq \frac{1}{\sqrt{2}}$  $D_f = [k\pi - \frac{\pi}{4}, k\pi + \frac{\pi}{4}]$ ب)
$\sqrt{2} \cos x - 1 \geq 0, \cos x \geq \frac{1}{\sqrt{2}}$ $x \in [\frac{\pi}{4} + 2k\pi, \frac{3\pi}{4} + 2k\pi], k \in \mathbb{Z}$ ج: $D_f = [\frac{\pi}{4}, \frac{3\pi}{4}]$	د) $1 - 2 \cos x \geq 0 \rightarrow \cos x \leq \frac{1}{2}$  $D_f = [2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3}]$
الف) $-1 < \cos x < 1$ $-1 < \cos^2 x + \cos x + 1 < 1 \rightarrow \cos^2 x + \cos x < 0$ $(\cos x + 1)(\cos x) < 0 \rightarrow \cos x < -1$ و $\cos^2 x + \cos x + 1 < 1 \rightarrow \cos x(\cos x + 1) < 0 \rightarrow -1 < \cos x < 0$ $D_f = [-\frac{\pi}{2}, -\frac{\pi}{4}] \cup [\frac{3\pi}{4}, \pi]$	$\cos y = \sqrt{5-2x}, \cos y \geq 0, -1 \leq \cos y \leq 1$ $0 \leq \sqrt{5-2x} \leq 1 \rightarrow x \leq \frac{5}{2}, x \geq 2$ $[\frac{5}{2}, \frac{5}{2}] = \text{نقطه}$ و همچنین $\cos y \geq 0$ $y \in [-\frac{\pi}{2} + 2k\pi, \frac{\pi}{2} + 2k\pi], k \in \mathbb{Z}$
$y = \log_2(1 - \log_2^x) \rightarrow \begin{cases} x \geq 1 \\ 1 - \log_2^x > 0 \end{cases}$ $\Rightarrow 0 < x < 1 \Rightarrow D_f = (0, 1)$	د) $y = \log_2(1 - \log_2^x)$ $\rightarrow \log_2^x < 1 \rightarrow x < 2$ و $\log_2^x > 0 \rightarrow x > 1$ $D_f = (1, 2)$ انتخاب کردن راسی منهای مقادیر بافرسین (۱۰۰) باشد
$\frac{x-2}{x-1} \geq 1, x \neq 1$ $\frac{x-2}{x-1} \geq 1 \rightarrow x-2 \geq x-1$ $(x-2)(x-1) \geq 0$ $\frac{1}{+} \frac{1}{-} \frac{1}{+}$ منفی ها را می نویسم $D_f = [1, 2]$	د) $\frac{x+5}{x+2} \in \omega \rightarrow x \in -\frac{x+5}{x+2}$ $\rightarrow x \in \frac{5-x}{x+2}$ $D_f = \{x \mid x = \frac{-k+5}{k+2}, k \in \omega\}$