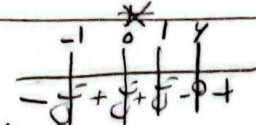
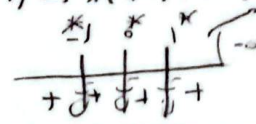
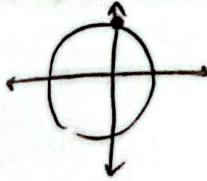
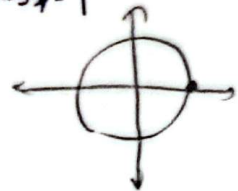


الف) $y = \sqrt{\frac{x^2 - 2x}{x^2 - x}}$  $\frac{x(x-2)}{x(x-1)} \geq 0$ $x(x+1)(x-1) > 0 \Rightarrow D_f = (-1, 1) \cup [2, +\infty)$	ب) $y = \sqrt{\frac{x^2 - x}{x^2 - x}} \geq 0$ $x^2(x^2 - 1) \rightarrow x^2(x-1)(x+1)$ $x(x^2 - 1) \rightarrow x(x-1)(x+1) = D_f$  $D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	1
الف) $y = \frac{x+1}{\sqrt{x+1}}$ $x+1 > 0$ $x > -1$ $D_f = R^+$	ب) $y = \frac{1}{\sqrt{x x }}$ $x x > 0$ $0 < x$ $+ \checkmark$ $- \checkmark$ $D_f = R - \{0\}$	2
الف) $y = \sqrt{2-x}$ $2-x \geq 0$ $[x] \leq 2$ $D_f = (-\infty, 2]$	ب) $y = \frac{1}{\sqrt{2-x}}$ $2-x > 0$ $[x] < 2$ $D_f = (-\infty, 2)$	3
الف) $y = \sqrt{[x - \frac{1}{x}] + [x + \frac{1}{x}]}$ $[x + \frac{1}{x}] + [x - \frac{1}{x}] \geq 0 \Rightarrow D_f = [\frac{1}{x}, +\infty)$ $[x + \frac{1}{x}] - 1 + [x - \frac{1}{x}] \geq 0 \Rightarrow x + \frac{1}{x} \geq 1 \Rightarrow x \geq \frac{1}{x}$ $2[x + \frac{1}{x}] - 1 \geq 0 \Rightarrow [x + \frac{1}{x}] \geq \frac{1}{2} \Rightarrow x + \frac{1}{x} \geq \frac{1}{2}$	ب) $y = \sqrt{[x - \frac{1}{x}] + [-x + \frac{1}{x}]}$ $[x - \frac{1}{x}] + [-x + \frac{1}{x}] \geq 0$ $x - \frac{1}{x} \in \mathbb{Z}$ $D_f = \{x \mid x \in \mathbb{R} = k + \frac{1}{x}, k \in \mathbb{Z}\}$	4
الف) $y = \frac{x}{\sin x - 1}$ $\sin x - 1 \neq 0$ $\sin x \neq 1$  $D_f = \{x \mid x \in \mathbb{R} + \frac{\pi}{2}\}$	ب) $y = \frac{x}{\sqrt{\sin x - 1}}$ $\sqrt{\sin x - 1} \neq 0$ $\sqrt{\sin x} \neq 1$ $\sin x \neq \frac{1}{x}$ $\sin x \neq \frac{1}{x}$	5

$1) y = \sqrt{x \sin x - 1}$ $x \sin x - 1 \geq 0$ $\sin x \geq \frac{1}{x}$  $D_f = \left[\frac{\pi}{2}, \pi + \frac{\pi}{2} \right] \cup \left[\frac{3\pi}{2}, 2\pi + \frac{\pi}{2} \right]$	$2) y = \sqrt{\cos x - 1}$ $\cos x - 1 \geq 0$ $\cos x \leq 1$  $D_f = \mathbb{R}$
$1) \cos y = x + 5 $ $-1 \leq x + 5 \leq 1$ $-1 \leq x + 5 \leq 1$ $-6 \leq x \leq -4$ $D_f = [-6, -4]$	$2) y = \arcsin(x^2 + 2x + 1)$ $-1 \leq x^2 + 2x + 1 \leq 1$ $D_f = [-\infty, -2] \cup [-1, +\infty)$
$1) y = \sqrt{x - \log_p(x-1)}$ $x - \log_p(x-1) \geq 0$ $1 \cdot \log_p(x-1) \leq x \rightarrow x-1 \leq 1 \rightarrow x \leq 2$ $x-1 > 0$ $x > 1$ $D_f = (1, 2]$	$2) y = \log(x^2 - x)$ $x^2 - x > 0$ $x(x-1) > 0$ $D_f = [-1, 0] \cup [1, +\infty)$
$1) y = \frac{x}{e^x + 1}$ $e^x + 1 \neq 0 \rightarrow e^x \neq -1$ $D_f = \mathbb{R}$	$2) y = \frac{x}{e^x - 1}$ $e^x - 1 \neq 0 \rightarrow e^x \neq 1 \rightarrow x \neq 0$ $D_f = \mathbb{R} - \{0\}$
$2) y = \frac{x}{e^x - 2}$ $e^x - 2 \neq 0 \rightarrow e^x \neq 2 \rightarrow x \neq \log_e 2$ $D_f = \mathbb{R} - \{\log_e 2\}$	$3) y = \frac{x}{e^x - 3}$ $e^x - 3 \neq 0 \rightarrow e^x \neq 3 \rightarrow x \neq \log_e 3$ $D_f = \mathbb{R} - \{\log_e 3\}$
$1) y = (e^x + 1)!$ $e^x + 1 \in \mathbb{W}$ $\frac{e^x + 1}{e} \in \mathbb{W}$ $x \in \frac{\ln(e^x + 1)}{e}$ $D_f = \{x x = \frac{k-1}{e}, k \in \mathbb{W}\}$	$2) y = \left(\frac{e^x - 1}{e^x - a} \right)!$ $\frac{e^x - 1}{e^x - a} \in \mathbb{W} \rightarrow e^x - 1 \in (e^x - a)\mathbb{W}$ $e^x - 1 = (e^x - a)k \rightarrow x = \frac{\ln(a + (1-a)k)}{1-k}$ $D_f = \{x x = \frac{\ln(a + (1-a)k)}{1-k}, k \in \mathbb{W}\}$