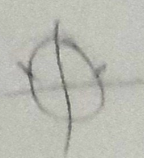
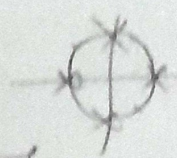


$2x^3 + 9x^2 + 10x + 3 \neq 0$ $2x^3 + 9x^2 + 10x + 3 \Big x+1$ $\begin{array}{r} 2x^3 + 9x^2 + 10x + 3 \\ -(2x^3 + 2x^2 + 2x + 2) \\ \hline 7x^2 + 8x + 1 \end{array}$ $(x+1)(2x^2+7x+1) \neq 0$ $\mathbb{R} - \left\{ -1, \frac{\pm\sqrt{41}-7}{4} \right\}$	(الف) $2x^3 + 2x^2 - 1x + 3 \neq 0$ $2x^3 + 2x^2 - 1x + 3 \Big x-1$ $\begin{array}{r} 2x^3 + 2x^2 - 1x + 3 \\ -(2x^3 - 2x^2 + 2x - 2) \\ \hline 4x^2 - 3x + 5 \end{array}$ $(x-1)(2x^2+4x-1) \neq 0$ $\mathbb{R} - \left\{ 1, \frac{-\infty \pm \sqrt{33}}{4} \right\}$
$\frac{x+3}{(x-1)(x^2-x+1)} \geq 0$ $\frac{-3}{+\phi - \phi +}$ $\mathbb{R} - (-3, 1)$	(الف) $x^3 - 2x^2 + 2x - 1 \neq 0$ $x^3 - 2x^2 + 2x - 1 \Big x-1$ $\begin{array}{r} x^3 - 2x^2 + 2x - 1 \\ -(x^3 - x^2 + x - 1) \\ \hline -x^2 + x \end{array}$ $(x-1)(x^2-x+1) \neq 0$ $\mathbb{R} - \{ -1 \}$
$x^2 - \omega x-1 - 2x + \omega \neq 0$ $x > 1 \rightsquigarrow x^2 - \sqrt{x} + 1 \neq 0 \rightsquigarrow x \neq \omega, 2$ $x < 1 \rightsquigarrow x^2 + 3x \neq 0 \rightsquigarrow x \neq 0, -3$ $x = 1 \rightsquigarrow 1 - 1 + \omega \neq 0$	$\mathbb{R} - \{ \omega, 2, 0, -3 \}$
$[x]^2 - 2[x] - 3 \neq 0$ $\mathbb{R} - [3, 4) \cup [-1, 0)$	(الف) $[x] - 2 \geq 0$ $[x] \geq 2$ $\mathbb{D} = (-\infty, -2]$
$\left[x + \frac{1}{3} \right] - 1 + \left[x + \frac{1}{3} \right] \geq 0$ $\left[x + \frac{1}{3} \right] \geq \frac{1}{3}$ $x + \frac{1}{3} \geq 1 \rightsquigarrow x \geq \frac{2}{3}$ $\left[\frac{2}{3}, +\infty \right)$	$\mathbb{D}_f = \left\{ x \mid x = k + \frac{1}{3}, k \in \mathbb{Z} \right\}$ (ب)

$\frac{1}{r} \geq \sin^2 x$ $\frac{1}{r} \geq \sin x$ $\mathbb{R} - \left(rk\pi + \frac{\pi}{r}, rk\pi + \frac{5\pi}{r} \right)$	$(\leftarrow)$ 	$\tan x \neq -1$ $\mathbb{R} - \left\{ k\frac{\pi}{r}, k\pi + \frac{r\pi}{r} \right\}$	(الف) 	٦
$1 - r \cos x > 0$ $\frac{1}{r} > \cos x$ $\mathbb{R} - \left(rk\pi - \frac{\pi}{r}, rk\pi + \frac{\pi}{r} \right)$	$(\leftarrow)$	$r \sin x - 1 > 0$ $\sin x > \frac{1}{r}$ $\left[rk\pi + \frac{\Delta\pi}{r}, rk\pi + \frac{\pi}{r} \right]$	(ب)	٧
$-1 \leq \sqrt{a+x} \leq 1$ $ a+x \leq 1$ $r \leq x \rightsquigarrow [r, +\infty)$	$(\leftarrow)$	$ x^r + rx + 1 \leq 1$ $ x^r + rx \leq 0 \rightsquigarrow [-r, 0]$ $x^r + rx + 2 \geq 0 \rightsquigarrow [-r, -1]$ $D = [-r, -1]$	(الف)	٨
$x > 0$ $\log_{\frac{1}{r}} x < 1 \rightsquigarrow x < \frac{1}{r}$ $\left\{ x \mid x < \frac{1}{r} \right\}$	$(\leftarrow)$	$x > 0$ $\log_{\frac{1}{r}} x < 1 \rightsquigarrow x < r$ $\left\{ x \mid x < r \right\}$	(الف)	٩
$\frac{rx+a}{rx+r} \in W$ $rx+a = rxw + rw$ $rx - rxw = rw - a$ $x = \frac{rw-a}{r-rw} \rightsquigarrow D = \left\{ x \mid x = \frac{rw-a}{r-rw}, k \in W \right\}$	$(\leftarrow)$	$r^r x - x^r$ $x^r - r^r x + r^r \leq 0$ $\frac{1}{+} \quad \frac{r}{-} \quad \frac{r}{+}$ $\left\{ x \mid 1 \leq x \leq r \right\}$	(الف)	١٠