

$$b) \quad y^x + y = x^y + 1 \rightarrow y^x + y = x^y + 1$$

$$y_1^r - y_r^r + y_1 - y_r = 0 \quad (y_1 - y_r)(y_1^r + y_1 y_r + y_r^r) + (y_1 - y_r)$$

$$(y_1 - y_r)(y_1^r + y_1 y_r + y_r^r + 1) = 0 \quad \begin{matrix} y_1 - y_r = 0 \\ y_1^r + y_1 y_r + y_r^r + 1 = 0 \end{matrix}$$

$$(y_1 - y_r)(y_1^r + y_1 y_r + y_r^r + 1) = 0 \quad y_1 - y_r = 0$$

$$y_1 = \frac{-y_r \pm \sqrt{\Delta}}{r} \quad \Delta = y_r^r - r(y_r^r + 1) = y_r^r - r y_r^r - r = -r y_r^r - r = -r(y_r^r + 1)$$

$\Delta > 0 \rightarrow \frac{1}{x_1} \rightarrow y_1 = y_r$ (الف) $y = x^r - 1$ $y = 1 - 1 = 0$ $x = 1$ $y = x^r - 1 \rightarrow y_1 = y_r$

$$C.) y^r + x^r = r n - 1 \quad \xrightarrow{x_1 = 2r}$$

$$y^r = \sqrt[r]{r n - 1 - x^r}$$

$$y^r_1 = y^r \quad y_1 = \sqrt[r]{r n - 1 - x^r_1}$$

$$\text{b) } \tan \theta = \frac{\sin \theta}{\cos \theta} = \frac{\frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}}} = 1$$

$$\hookrightarrow C_0 + \frac{\sqrt{\pi}}{q} = C_0 + \frac{1}{\frac{q}{\sqrt{\pi}}} = \frac{P}{\frac{1}{\frac{q}{\sqrt{\pi}}}} = \sqrt{\mu}$$

$$2.) \tan 330^\circ = \frac{\sin}{\cos} = \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} = -\frac{1}{\sqrt{3}} = -\frac{1}{\sqrt{3}}$$

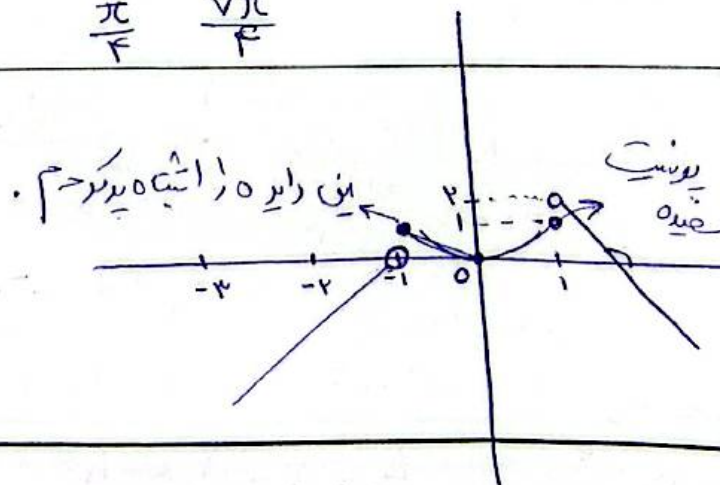
$$d) \cot 110^\circ = \frac{\cos 110^\circ}{\sin 110^\circ} = \frac{-1}{0} \Rightarrow \text{مخرج صفری}$$

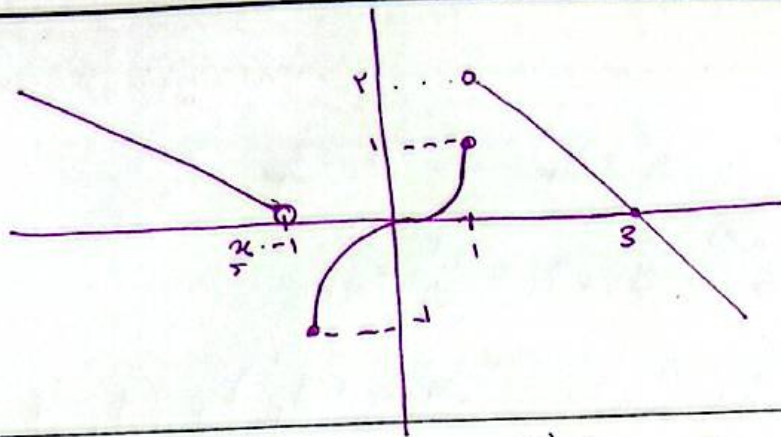
الف) $\sin \alpha = \frac{1}{4}$

$$\psi_0', \omega_0^* \rightarrow \frac{\pi}{9}, \frac{5\pi}{9}$$

ج) $\frac{\cos \alpha}{r} = \frac{\sqrt{r}}{r}$

$$\frac{45^\circ}{\frac{\pi}{4}}, \frac{135^\circ}{\frac{\pi}{4}}$$





الف) $(x-2)(x-3)(x-4)=y$
 $x=2 \quad x=3 \quad x=4$

$(-\infty, 2) \cup (3, 4) \rightarrow -$
 $(2, 3) \cup (4, +\infty) \rightarrow +$

ب) $y=(x-2)(x-3)(x-4)(x-5)$
 $x=2 \quad x=3 \quad x=4 \quad x=5$
 $(-\infty, 2) \cup (4, +\infty) \rightarrow +$
 $(2, 3) \cup (3, 4) \rightarrow -$

الف) $y = \frac{(x-2)(x-4)}{x-3}$
 $(2, 3) \cup (4, +\infty) \rightarrow +$
 $(-\infty, 2) \cup (3, 4) \rightarrow -$

ب) $y = \frac{(x-2)(x-4)}{(x-3)(x-5)}$
 $(-\infty, 2) \cup (4, +\infty) \rightarrow +$
 $(2, 3) \cup (3, 5) \rightarrow -$
 $(5, +\infty) \rightarrow +$

الف) $y = \frac{x^2 - 3x + 2}{x-3}$
 $(-\infty, 1) \cup (2, 3) \rightarrow -$
 $(1, 2) \cup (3, +\infty) \rightarrow +$

ب) $y = \frac{x^2 - 3x + 2}{x^2 - 4x + 3}$
 $(-\infty, 1) \cup (2, 3) \rightarrow -$
 $(1, 2) \cup (3, +\infty) \rightarrow +$

الف) $y = \frac{x^2 - x^2}{x^2 + x + 2} \rightarrow \Delta$
 $x^2 + x + 2 \rightarrow \Delta$

ب) $y = \frac{x^2 + 2x + 1}{x^2 + 2x + 2}$
 $3^2 - 4(1)2 = 9 - 8 = 1 = \Delta$

$P_f \in R$

$\Delta = 4 - 12 = -8$

$x \in R \rightarrow$