

با استفاده از روش تکرار سه باره حل کنید

نشان دهید که این معادله را می توان به صورت

الف) $y^3 - u = 2u^2 \Rightarrow y^3 = 2u^2 + u$
 ب) $|y| + u^2 = u + 3 \Rightarrow |y| = -u^2 + u + 3$
 ج) $\sqrt{u-2} + |y-2| = 0$

$|y| = 3 \Rightarrow y = 3 \text{ یا } y = -3$

$\sqrt{u-2} \geq 0$ $|y-2| \geq 0$

$\sqrt{u-2} = 0 \Rightarrow u = 2$

$|y-2| = 0 \Rightarrow y = 2$ $(2, 2)$

د) $u = \cos y$

$u = 1$

$\cos y = 1$

$y = 0, 2\pi, \dots \in \pi$

$(3, 1)$ $(y=1) \Rightarrow u=1$

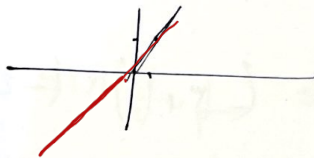
$y - y_1 = m(u - u_1)$

$y - 2 = 2(u - 1)$

$y - 2 = 2u - 2$

$y = 2u$

عوارض (الف)
 (ب)



الف) $y = au + b$ $y = u$

$a = 1$ $b = 0$

$a + 2b = 1 + 2(0) = 1$

ب) $y = u^2 + au + b$

$1 = 2^2 + (-2)(2) + b$

$1 = 4 - 4 + b$

$1 = b - 0$

$b = 1$

$\frac{y}{u} = -\frac{a}{2}$

$-\frac{a}{2} = 2$ $a = -4$

$a + 2b = -4 + 2(1)$

$a + 2b = -2$

$y = 2u + 1$

نکته: ۲
 عرض از مبدا ۱

$\frac{u}{y} \begin{vmatrix} -1 & 0 & 1 \\ 2 & 1 & 3 \end{vmatrix}$

$(-1, -1)$ $(0, 1)$ $(1, 3)$

الف) عوارض
 $y = u^2$

(ج) (ک)

$y = -3u + 1$

نکته: ۳
 عرض از مبدا ۱

$\frac{u}{y} \begin{vmatrix} -1 & 0 & 1 \\ 3 & 1 & 2 \end{vmatrix}$

$(-1, 4)$ $(0, 1)$ $(1, -2)$

(ب) $\frac{u}{y} \begin{vmatrix} -2 & -1 & 0 & 1 & 2 \\ 14 & 1 & 0 & 1 & 4 \end{vmatrix}$

$(-2, 14)$ $(-1, 1)$ $(0, 0)$ $(1, 1)$ $(2, 4)$

$$y = x^0 \quad (0, 1, 0) \quad \begin{array}{c|ccc} x & -2 & -1 & 0 & 1 & 2 \\ \hline y = x^0 & -2 & -1 & 0 & 1 & 2 \end{array}$$

$$(-2, -2) (-1, -1) (0, 0) (1, 1) (2, 2)$$

غودار

(4)

$$y = |x-2| + 3$$

$$\begin{cases} -x+5 & x < 2 \\ x+1 & x \geq 2 \end{cases}$$

$$x-2 \rightarrow \text{مقدار } 2 \\ +5 \rightarrow \text{مقدار } 5 \\ (2, 3)$$

غودار

1

(5)

$$(2, 3) (1, 2) (3, 2) (0, 1) (2, 1)$$

$$y = -|x+3| + 1 \quad \Rightarrow y = -x-2 \quad x < -3 \quad y = x-2 \quad x > -3$$

غودار

$$(-3, 1)$$

$$y = \begin{cases} x+2 & x < -3 \\ -x-2 & x > -3 \end{cases} \quad (-3, 1) \quad (-2, 0) \quad (-1, 0) \quad (0, -1) \quad (-1, -1)$$

$$y = \frac{x+2}{x^2 - \sqrt{x} + 14} \quad x^2 - \sqrt{x} + 14 = 0$$

$$\Delta = (-\sqrt{14})^2 - 4(1)(14) = 14 - 56 = -42 < 0$$

$$D = R$$

$$y = \frac{x+2}{x^2 - \sqrt{x} + 14} \quad x^2 - \sqrt{x} + 14 = x^2(x-2)(x+2)$$

$$(y) \quad y = \frac{x+2}{x^2 - \sqrt{x} + 14} \quad x^2 - \sqrt{x} + 14 = x(x-2)(x+2)$$

$$x \neq 0 \quad x \neq 2$$

$$D = R \setminus \{0, 2\}$$

$$b \quad y = \frac{x+2}{x^2 + x + 2} \quad D = R$$

$$x^2 + x + 2 = 0$$

$$\Delta = 1 - 4(1)(2) = 1 - 8 = -7 < 0$$

$$x^2(x-2)(x+2) \neq 0 \quad x \neq 0 \quad x \neq 2 \quad x \neq -2$$

$$D = R \setminus \{-2, 0, 2\}$$

$$y = \frac{\sqrt{x}-2}{x-2}$$

$$x \geq 0$$

$$x-2 \neq 0 \Rightarrow x \neq 2$$

$$D = [0, 2) \cup (2, +\infty)$$

$$(2) \quad y = \frac{x+1}{x^2+1}$$

$$x^2+1 > 0$$

$$D = R$$

$$(y) \quad y = \sqrt{4-x} + \sqrt{x-2}$$

$$4-x \geq 0 \Rightarrow x \leq 4$$

$$x-2 \geq 0 \Rightarrow x \geq 2$$

$$D = [2, 4]$$

(الف) (4)

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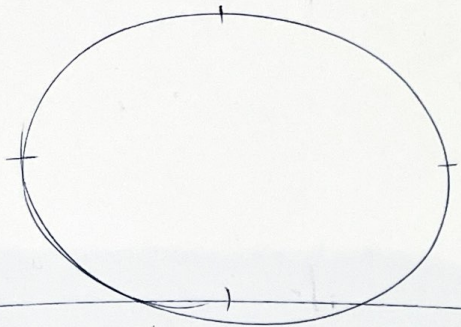
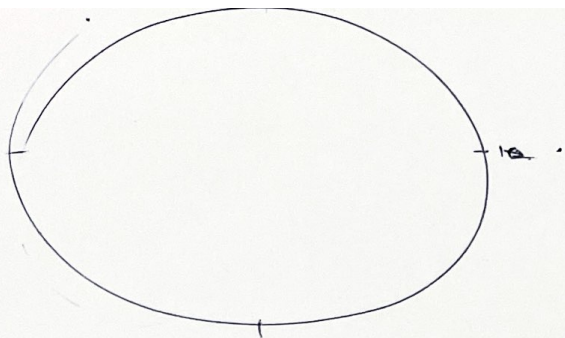
$$y = \frac{x+1}{|x|+x^2}$$

$$|x|+x^2 \neq 0$$

$$D = R \setminus \{0\}$$

$$(-\infty, 0) \cup (0, +\infty)$$

(1)



$$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} \Rightarrow \cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} \quad \sin \frac{\pi}{4} = \frac{1}{\sqrt{2}} \quad \sin \frac{5\pi}{4} = -\frac{1}{\sqrt{2}} \quad \sin \frac{3\pi}{4} = \frac{1}{\sqrt{2}} \quad (k \in \mathbb{Z})$$

(1.1.1)

$$\cos\left(\frac{4\pi}{4}\right) = \frac{\sqrt{2}}{2} \quad \sin\theta = \frac{\sqrt{2}}{2} \Rightarrow \theta = \frac{\pi}{4}, \frac{3\pi}{4}$$

$\xrightarrow{\text{قرينة}} -\frac{\sqrt{2}}{2} \rightarrow \sin \frac{5\pi}{4}, \frac{7\pi}{4}$

(-)