

پیریا احسنی

$$-2 \leq \frac{3x+2}{\omega} \leq 2 \rightarrow -10 \leq 3x+2 \leq 20 \rightarrow -12 \leq 3x \leq 18 \rightarrow -4 \leq x \leq 6$$

-1

$$D_{f\left(\frac{3x+2}{\omega}\right)} = [-4, 6]$$

$$x \rightarrow [-2, 3]$$

$$3x-2 \begin{cases} \rightarrow x=-2 \rightarrow -4-2=-6 \\ \rightarrow x=3 \rightarrow 9-2=7 \end{cases}$$

$$D_f = [-6, 7]$$

-2

$$x \rightarrow [-1, 2)$$

$$\frac{-x+1}{y} = -1$$

$$[-1, \omega)$$

$$-1 \leq 2-\omega x < \omega \rightarrow -3 \leq -\omega x < \omega$$

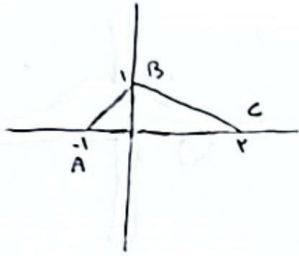
-3

$$\rightarrow \frac{\omega}{\omega} \geq x > -\frac{\omega}{\omega} \rightarrow D = \left(-\frac{\omega}{\omega}, \frac{\omega}{\omega}\right]$$

$$A|_{-1}^0 \quad B|_0^1 \quad C|_1^2$$

-15

$\downarrow x_2+1$ (عكس)



$$A|_{-1}^{-\frac{1}{3}} \quad B|_{-\frac{1}{3}}^{\frac{1}{3}} \quad C|_{\frac{1}{3}}^{\frac{2}{3}} \longrightarrow A|_{-\frac{1}{3}}^{\frac{1}{3}} \quad B|_{\frac{1}{3}}^{\frac{2}{3}} \quad C|_{\frac{2}{3}}^{\frac{4}{3}}$$

$\downarrow x_2+x_3$

$$A|_{-\frac{1}{3}}^{-\frac{2}{3}} \quad B|_{-\frac{2}{3}}^{\frac{1}{3}} \quad C|_{\frac{1}{3}}^{\frac{4}{3}}$$



$$A|_{-1}^0 \quad B|_0^1 \quad C|_1^2$$

-16

$$A \rightarrow x' = \frac{1}{3}, y' = 0 \quad B \rightarrow x' = 0, y' = 1$$

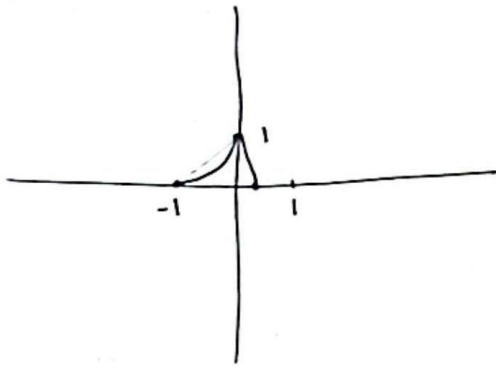
$$C \rightarrow x' = -1, y' = 0$$

$$A|_{-\frac{1}{3}}^{\frac{1}{3}} \quad B|_{\frac{1}{3}}^{\frac{2}{3}} \quad C|_{\frac{2}{3}}^{\frac{4}{3}}$$

$$(x, y) \rightarrow (x', y') = \left(\frac{x-a}{r}, \frac{y}{r} \right)$$

$$x - x'a = x \Rightarrow x'a = x - x \rightarrow x' = \frac{x-a}{r}$$

$$y' = \frac{1}{r} y$$



$$y = -\frac{1}{3}x^2 + \frac{2}{3}x + 1 \rightarrow \frac{-b}{2a} = \frac{-\frac{2}{3}}{-\frac{2}{3}} = 1$$

$$a \rightarrow \text{تفسير في كذا} \rightarrow -\frac{1}{3}(x-\epsilon)^2 + 3$$

$$y_s = -\frac{1}{3}x^2 + \frac{2}{3}x + 1 = 1.12$$

$$\text{بافتراض باء صفر} \rightarrow -\frac{1}{3}(x-\epsilon)^2 + 3 = 0 \rightarrow$$

$$-\frac{1}{3}(x-\epsilon)^2 = -3 \rightarrow (x-\epsilon)^2 = 9 \rightarrow x-\epsilon = 3, -3$$

$$\begin{aligned} x-\epsilon = 3 &\rightarrow x = 4 \\ x-\epsilon = -3 &\rightarrow x = 1 \end{aligned}$$

$$3x' + 2 = x \rightarrow \frac{x-2}{3} = x'$$

$$y' = -2y + 1$$

$$\begin{array}{ccc} \begin{vmatrix} -1 \\ 0 \\ 1 \end{vmatrix} & \begin{vmatrix} 1 \\ 1 \\ -1 \end{vmatrix} & \begin{vmatrix} 3 \\ 0 \\ 1 \end{vmatrix} \\ \downarrow & \downarrow & \downarrow \\ \begin{vmatrix} -1 \\ 1 \\ 1 \end{vmatrix} & \begin{vmatrix} 1 \\ -1 \\ -1 \end{vmatrix} & \begin{vmatrix} 3 \\ 1 \\ 1 \end{vmatrix} \\ \downarrow & & \\ \text{اس} & & \end{array}$$

$$\alpha/\beta = -\frac{1}{3} \times (-7) = \frac{7}{3}$$

$$a < x-1 \leq c \rightarrow \underbrace{a+1 < x \leq c}_{Df(x-1)}$$

$$-1 \leq x+1 < b \rightarrow \underbrace{-2 \leq x < b-1}_{Dg(x+1)}$$

$$\underbrace{(a+1, c] \cap [x, b-1)}_{(-2, c)} \begin{cases} \rightarrow b-1 = c \rightarrow b = 4 \\ \rightarrow a+1 = -2 \rightarrow a = -3 \end{cases} \left. \begin{matrix} \\ \end{matrix} \right\} a-b = -3-4 = -7$$

$$-3 \leq x \leq c \rightarrow -\frac{3}{2} \leq \frac{x}{2} \leq \frac{c}{2} \rightarrow \underbrace{-\frac{1}{2} \leq \frac{x}{2} + 1 \leq \frac{c}{2}}_{Df(x)}$$

$$Rf(x) = [-1, 23]$$

برای عبارت $\sqrt{|2f(x) - 3|}$ دامنه تعریف کن (عملیات روی x انجام شده)

$$D = [-\frac{1}{2}, \frac{c}{2}]$$

$$f(x) \in [-1, 23] \rightarrow 2f(x) \in [-2, 46] \rightarrow 2f(x) - 3 \in [-5, 43] \xrightarrow[\text{مطلق}]{\text{اعمال قدر}}$$

$$\text{بیشترین قدر} = \Delta \xrightarrow{\text{رادیکال}} R = [0, \sqrt{43}]$$

10

$$\left| \frac{x+1}{x^2-3} \right| \xrightarrow[\text{جای } x \text{ می نه } 1]{\text{مقامی}} \left| \frac{x-1}{x^2-3} \right| \xrightarrow[\text{یک واحد به بالا}]{\text{مقامی}} \left| \frac{x-1}{x^2-3} \right| + 1$$

$$x + \left| \frac{x-1}{x^2-3} \right| + 1 < 0 \rightarrow \left| \frac{x-1}{x^2-3} \right| < \underbrace{-(x+1)}_{\text{منفی}} \xrightarrow{(\quad)^2} \frac{(x-1)^2}{(x^2-3)^2} < (x+1)^2$$

$$(x-1)^2 < (x+1)^2 (x^2-3)^2$$

$$x+1 < 0 \rightarrow x < -1$$

$$(x-1)^2 < \underbrace{((x+1)(x^2-3))^2}_{x^2-2x-3} \rightarrow (x^2-2x-3)^2 - (x-1)^2 > 0$$

$$((x^2-2x-3) - (x-1))(x^2-2x-3 + (x-1)) > 0$$

$$(x^2-3x-2)(x^2-3) > 0$$

$$x(x^2-2x-1)(x^2-3) > 0$$

$$\begin{array}{ccccccc} -\sqrt{3} & \frac{1+\sqrt{5}}{2} & \sqrt{3} & \frac{1+\sqrt{5}}{2} \\ + & - & + & - & + \end{array}$$

$$\frac{1+\sqrt{5}}{2} \leftarrow \pm \sqrt{3} \leftarrow x < -1 \rightarrow \text{در } (-\infty, -\sqrt{3}) \text{ اشتباه}$$