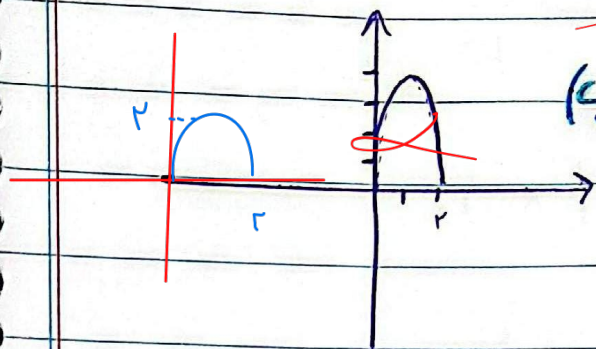


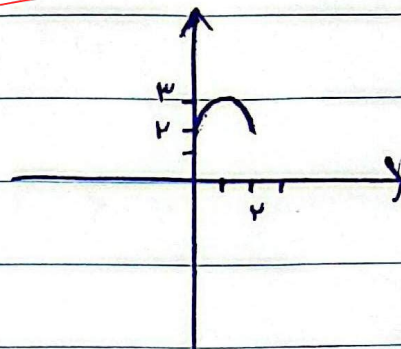
« دهم بزر »

۱۸، ۷۶

« امیر علی چاهی »



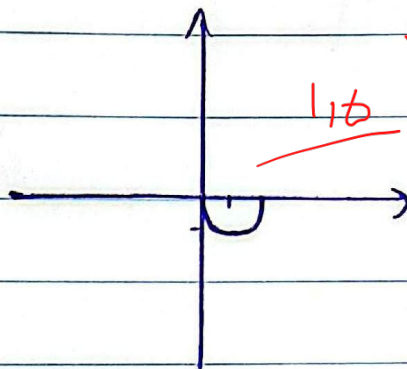
ب)



الف)

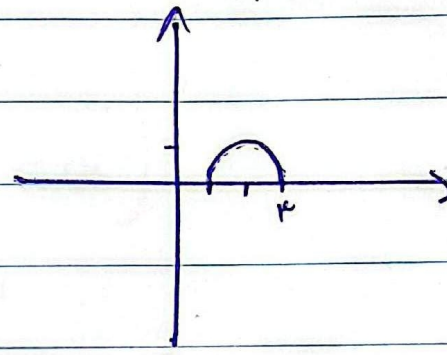
$f(x) = y$ و $y = 2$

$f(x) + 2$
رو به بالا



۱۶

()

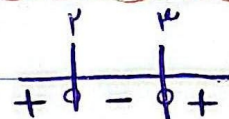


ج)

$-f(x)$
 $y = -f(x)$

$f(x-1)$
یک واحد سمت راست

$x^2 - 4x + 4 > 0$ $(x-2)(x-2)$



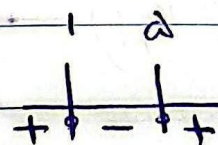
الف)

سهم ها را در نظر

$D_f = (-\infty, 2) \cup (2, +\infty)$

فرگینیم

$x^2 - 4x + 4 < 0$ $(x-1)(x-5)$



ب)

$D_f = (1, 5)$

سهم ها را در نظر فرگینیم

$$x^2 + 4x + \omega > 0 \quad (x+1)(x+\omega) \quad \begin{array}{c} -\omega \quad -1 \\ + \quad | \quad - \quad | \quad + \\ \hline \end{array} \quad (ج)$$

$$D_f = (-\infty, -\omega] \cup [-1, +\infty)$$

$$x^2 - 4x + 4 < 0 \quad (x-1)(x-4) \quad \begin{array}{c} 1 \quad 4 \\ + \quad | \quad - \quad | \quad + \\ \hline \end{array} \quad (د)$$

$$D_f = [1, 4]$$

(د) ✓

$$\frac{x^2 - 2x + 1}{x - \omega} < 0 \quad \frac{(x-1)(x-1)}{x - \omega} \quad \begin{array}{c} 1 \quad 1 \quad \omega \\ - \quad | \quad + \quad | \quad - \quad | \quad + \\ \hline \end{array} \quad (الف) (ك)$$

$$D_f = (-\infty, 1) \cup (1, \omega)$$

(ك) ✓

$$\frac{x^2 - 1}{x^2 - 4x + \omega} > 0 \quad \frac{(x-1)(x+1)}{(x-1)(x-\omega)} \quad \begin{array}{c} -1 \quad 1 \quad \omega \\ + \quad | \quad - \quad | \quad - \quad | \quad + \\ \hline \end{array} \quad (ب)$$

$$D_f = (-\infty, -1] \cup (\omega, +\infty)$$

$$y = \sqrt{\frac{x^2 - 1}{x^2 - x}} \quad \frac{(x-1)(x^2 + x + 1)}{x(x-1)(x+1)} > 0 \quad \begin{array}{c} -1 \quad 0 \quad 1 \quad \star \\ + \quad | \quad - \quad | \quad + \quad | \quad + \\ \hline \end{array} \quad (الف) (ك)$$

$$D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$$

(ك) ✓

$$y = \sqrt{\frac{x^2 - 14}{x^2 - 2x + 1}} \quad \frac{(x-2)(x+2)}{(x-1)(x-2)} > 0 \quad \begin{array}{c} -2 \quad 1 \quad 1 \quad \star \\ + \quad | \quad - \quad | \quad + \quad | \quad + \\ \hline \end{array} \quad (ب)$$

$$D_f = (-\infty, -1] \cup (1, 1) \cup (2, +\infty)$$

$$y = \sqrt{K - \sqrt{P - x}}$$

(الف) (5)

$$K - \sqrt{P - x} \geq 0 \quad \text{و} \quad P - x \geq 0$$

$$K \geq \sqrt{P - x}$$

$$P \geq x$$

$$14 \geq P - x$$

$$x \leq P$$

$$x \geq -14$$

$$D_f = [-14, P]$$

$$y = \sqrt{K - \sqrt{x - P}}$$

(ب) ✓

(ب)

$$K - \sqrt{x - P} \geq 0$$

$$\text{و} \quad x - P \geq 0$$

$$K \geq \sqrt{x - P}$$

$$x \geq P$$

$$9 \geq x - P$$



$$x \leq 11 \rightarrow D_f = [P, 11]$$

$$y = \sqrt{K - P|x|^P} \Rightarrow K - P|x|^P \geq 0$$

(ج) (الف)

$$P - |x|^P \geq 0$$

$$|x|^P \leq P$$

$$-\sqrt{P} \leq x \leq \sqrt{P}$$

$$D_f = [-\sqrt{P}, \sqrt{P}]$$

(د) ✓

$$y = \sqrt{K|x| - 9}$$

$$K|x| - 9 \geq 0 \Rightarrow |x| \geq \frac{9}{K}$$

(ب)

$$D_f = \left[\frac{9}{K}, +\infty \right) \cup \left(-\infty, -\frac{9}{K} \right]$$

$$x \geq \frac{9}{K}$$

$$x \leq -\frac{9}{K}$$

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$$y = \sqrt{\frac{|u|+1}{|u|-1}} \quad |u| \neq 1 \Rightarrow u \neq \pm 1$$

(الف) (ب)

$$D_f = \mathbb{R} - \{\pm 1\}$$

$$y = \sqrt{\frac{\sqrt{u}+1}{\sqrt{u}-1}} \quad \sqrt{u} \neq 1 \text{ و } u \geq 0$$

(ب)

مشتق

$$D_f = \mathbb{R}^+ - \{1\} = [0, +\infty) - \{1\}$$

$$y = \frac{\sin u}{\cos u - 1}$$

$$\cos u \neq 1$$

(الف) (ب)

$$\cos u \neq \frac{1}{\mu} \rightarrow \text{مثلاً } \mu=0, \mu=2$$

$$D_f = \mathbb{R} - \left\{ \mu k \pi \pm \frac{\pi}{\mu} \right\}$$

لیست

$$y = \frac{\cos u + 1}{\sin u + 1}$$

$$\sin u \neq -1$$

(ب)

$$\sin u \neq -\frac{1}{\mu} \rightarrow \text{مثلاً } \mu=0, \mu=2$$

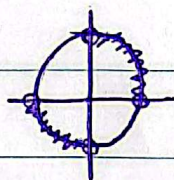
$$D_f = \mathbb{R} - \left\{ \mu k \pi - \frac{\pi}{\mu} \right\} \cup \left\{ \mu k \pi - \frac{\pi}{\mu} \right\}$$

$$y = \frac{\tan u + \mu}{\cot u - 1}$$

$$\cos \neq 0 / \sin \neq 0 / \frac{\cos}{\sin} \neq 1$$

(ج)

مثلاً



$$\cos u \neq 0 \quad u \neq k\pi + \frac{\pi}{2}$$

$$\sin u \neq 0 \quad u \neq k\pi$$

$$\cot u \neq 1 \quad u \neq k\pi + \frac{\pi}{4}$$

$$D_f = \mathbb{R} - \left[k\pi, k\pi + \frac{\pi}{\mu} \right]$$

باید بازه

$$\mathbb{R} - \left\{ \frac{k\pi}{\mu}, k\pi + \frac{\pi}{\mu} \right\}$$

SEVIL

دوم B بر

امیرعلی حاجی بی

$$y = \frac{\sin u + 1}{k \sin^2 u - k} \quad \sin^2 u \neq \frac{k}{k} \quad (1) \quad \text{نمایی ۱۲۰٪}$$

$$D_f = \mathbb{R} - \left\{ \left\{ 2k\pi + \frac{\pi}{k} \right\} \cup \left\{ 2k\pi + \frac{3\pi}{k} \right\} \right\}$$

$$y = \frac{1}{\sqrt{2|u-v| - \frac{1}{k}}} \quad 2|u-v| - \frac{1}{k} > 0 \quad (9)$$

زیرادکال
نیز، بسیاری
و منفرد می باشد

$$2|u-v| > \frac{1}{k}$$

$$① \quad u-v > \frac{1}{k} \Rightarrow u > \frac{v}{k}$$

$$② \quad u-v < -\frac{1}{k} \Rightarrow u < \frac{v}{k}$$

$$① \text{ و } ② \Rightarrow D_f = \left(-\infty, \frac{v}{k} \right) \cup \left(\frac{v}{k}, +\infty \right)$$

$$y = \sqrt{k - 2|u|} \quad k - 2|u| > 0 \quad (10)$$

$$k > 2|u|$$

$$D_f = [-2, 2]$$

$$2 > |u| \Rightarrow 2 > u > -2$$

$$y = \sqrt{\frac{|u|}{|u|}} \quad \text{ب}$$

$$|u| \neq 0 \Rightarrow u \neq 0$$

نیز، زیرادکال
مستوی صفر باشد و چون

$$D_f = \mathbb{R} - \{0\}$$

قدر مطلق داریم و در آن صفر شدن