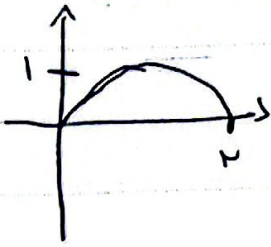
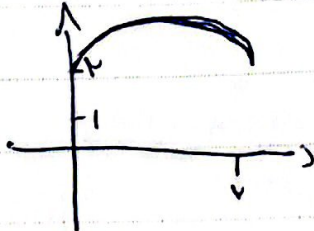


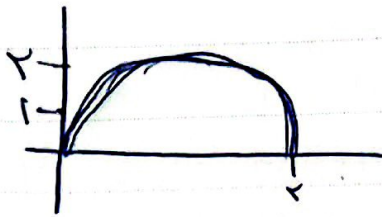
الذات السلطنة شتراني تَكْلِفِ سَمَرِه لِه ڪلاس مِجِها ۱۶٪ - ۱۸٪ A درخت



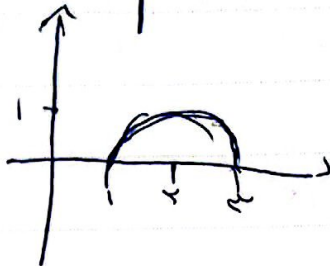
$$f(x) + y = \text{اف}$$



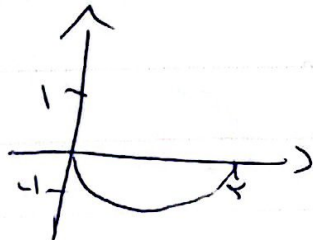
$$\rightarrow \psi_f(x)$$



$$c) f(n-1)$$



$$2) -f(x)$$



$\underbrace{n^2 - 2n + 6}_{\text{احزابہ مستقر}} > 0 \quad (n-2)(n-4) > 0$
 $\downarrow \quad \downarrow$
 $2 \quad 4$

$$\frac{x}{y} \mid \frac{p}{t} \frac{q}{b} \frac{r}{b} \frac{s}{t}$$

$$\text{---)} \quad x^5 - 4x + 1 < 0 \quad (x-1)(x-\omega) < 0$$

$\downarrow$
 ω

$\downarrow$
 ω

$$\text{---)} \quad |x - \omega| > 1$$

z_1	1	ω
y	$+p -$	$-p +$

بارہوی

ج) $n^2 + 4n + 4 \geq 0$ $\begin{matrix} (n+1) & (n+4) \\ -1 & -4 \end{matrix} \geq 0$

$$\begin{array}{r|rr} x & -a & -1 \\ y & +b & -b \end{array}$$

$$(-\infty, -1) \cup [1, +\infty)$$

$$2) x^2 - 7x + 4 \leq 0$$

$$(x-1)(x-4) \leq 0$$

$$\begin{array}{c|ccc} x & 1 & & 4 \\ \hline y & + & - & + \end{array}$$

$$[1, 4]$$

$$\text{الف) } \frac{x^2 - 3x + 2}{x-4} < 0$$

$$\frac{(x-1)(x-2)}{x-4} < 0$$

$$\begin{array}{c|ccc} x & 1 & 2 & 4 \\ \hline y & - & + & - \end{array}$$

$$(-\infty, 1] \cup [2, 4)$$

$$3) \frac{x^2 - 1}{x^2 - 4x + 4} \geq 0$$

$$\frac{(x+1)(x-1)}{(x-2)^2} \geq 0$$

$$\begin{array}{c|ccc} x & -1 & 1 & 2 \\ \hline y & + & - & + \end{array}$$

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

$$\text{الف) } y = \sqrt{\frac{x^2 - 1}{x^2 - x}}$$

$$\frac{x^2 - 1}{x^2 - x} \geq 0$$

بجسید غلط گیرند

$$x^2 - 1 = (x-1)(x^2 + x + 1) \Delta < 0$$

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

$$\begin{array}{c|ccc} x & -1 & 0 & 1 \\ \hline y & + & - & + \end{array}$$

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

$$1) \sqrt{\frac{x^2-14}{x^2-2x+1}}$$

$$\frac{x^2-14}{x^2-2x+1} \geq 0$$

$$\frac{(x+2)(x-2)}{(x-1)^2} \geq 0$$

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

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

$$-1 \leq x \leq 2$$

$$D_f = [-1, 2]$$

$$x-2 \geq 0 \quad (x \geq 2)$$

$$x - \sqrt{x-2} \geq 0$$

$$\sqrt{x-2} \leq x$$

$$x-2 \leq 1 \quad (-1 \leq x)$$

$$3) y = \sqrt{x} - \sqrt{x-2}$$

$$2 \leq x \leq 11$$

$$D_f = [2, 11]$$

$$x-2 \geq 0 \quad (x \geq 2)$$

$$x - \sqrt{x-2} \geq 0$$

$$\sqrt{x-2} \leq x$$

$$x-2 \leq 9 \quad (x \leq 11)$$

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

$$x-2 \geq 0$$

$$x+2 \geq 0$$

$$-\sqrt{2} \leq x \leq \sqrt{2}$$

$$D_f = [-\sqrt{2}, \sqrt{2}]$$

$$5) y = \sqrt{|x|-9}$$

$$|x|-9 \geq 0$$

$$|x| \geq 9$$

$$|x| \geq 9$$

$$x \geq 9$$

$$x \leq -9$$

$$D_f = (-\infty, -9] \cup [9, +\infty)$$

$$6) y = \sqrt{\frac{|x|+1}{|x|-2}}$$

$$|x|-2 \neq 0$$

$$|x| \neq 2 \quad x \neq \pm 2$$

$$D_f = \mathbb{R} - \{\pm 2\}$$

$$-.) y = \sqrt{\frac{\sqrt{x}+1}{\sqrt{x}-2}}$$

$$x \geq 0$$

$$\sqrt{x}-2 \neq 0 \quad D_f = [0, +\infty) - \{4\}$$

$$\sqrt{x} \neq 2 \quad x \neq 4$$

$$الف) y = \frac{\sin x}{x \cos x - 1}$$

-1

$$x \cos x - 1 \neq 0 \quad x \cos x \neq 1 \quad \cos x \neq \frac{1}{x}$$

$$\{x \neq x \mid x \neq \pm \frac{\pi}{2} \mid x \in \mathbb{Z}\} \quad D_f = \mathbb{R} - \{x \mid x \neq \pm \frac{\pi}{2} \mid x \in \mathbb{Z}\}$$

$$-.) y = \frac{\cos x + 1}{x \sin x + 1}$$

$$x \sin x + 1 \neq 0$$

$$x \sin x \neq -1 \quad \sin x \neq -\frac{1}{x} \quad x \neq \frac{\pi}{2}, \frac{3\pi}{2}$$

$$D_f = \mathbb{R} - \left\{x \mid x \neq \frac{\pi}{2}, \frac{3\pi}{2}\right\}$$

$$ج) y = \frac{\tan x + 1}{\cot x - 1}$$

$$\tan = \frac{\sin}{\cos} \quad \cos x \neq 0 \quad x \neq \frac{\pi}{2}, \frac{3\pi}{2}$$

$$\cot = \frac{\cos}{\sin} \quad \sin x \neq 0 \quad x \neq \pi, 2\pi$$

$$\cot x - 1 \neq 0 \quad \cot x \neq 1 \quad x \neq \frac{\pi}{2}, \frac{3\pi}{2}$$

$$D_f = \mathbb{R} - \left\{\frac{\pi}{2}, \frac{3\pi}{2}\right\}$$

$$د) y = \frac{\sin^2 x + 1}{x \sin^2 x - 2}$$

$$x \sin^2 x - 2 \neq 0$$

$$x \sin^2 x \neq 2$$

$$\sin^2 x \neq \frac{2}{x} \quad \sin x \neq \pm \sqrt{\frac{2}{x}} \quad \sin x \neq \pm \frac{\sqrt{2}}{\sqrt{x}}$$

$$D_f = \mathbb{R} - \left\{x \mid x \neq \frac{\pi}{2}, \frac{3\pi}{2}\right\}$$

$$y = \frac{1}{\sqrt{x|x-1| - \frac{1}{4}}}$$

$$x|x-1| - \frac{1}{4} > 0$$

$$x|x-1| > \frac{1}{4} \quad |x-1| > \frac{1}{2}$$

$$D_f = (-\infty, \frac{1}{2}) \cup (\frac{3}{2}, +\infty)$$

$$x-1 > \frac{1}{2} \quad x > \frac{3}{2}$$

$$x-1 < -\frac{1}{2} \quad x < \frac{1}{2}$$

$$3a) y = \sqrt{\varepsilon - x|x|}$$

$$\varepsilon - x|x| \geq 0$$

$$x|x| \leq \varepsilon \quad D_f = [-\varepsilon, \varepsilon]$$

$$|x| \leq \varepsilon \quad -\varepsilon \leq x \leq \varepsilon$$

$$b) y = \sqrt{\frac{|x|}{|x|}}$$

$$\begin{matrix} +\infty \\ -\infty \\ \pm x \end{matrix}$$

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

$$\frac{|x|}{|x|} \geq 0 \quad |x| \neq 0 \quad x \neq 0$$