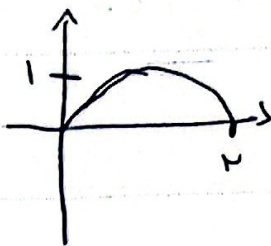
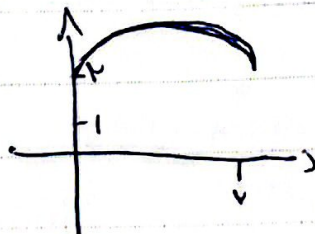


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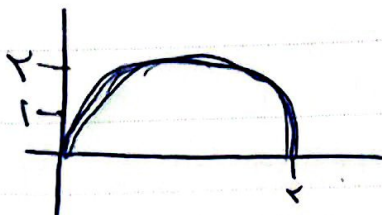
19, 175



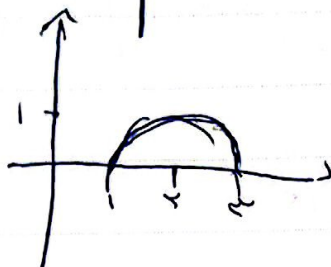
الف) $f(x) + 2 =$



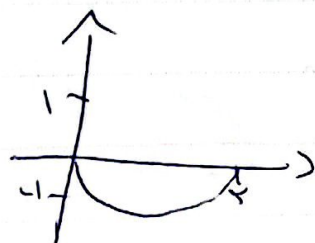
ب) $2f(x)$



ج) $f(x-1)$



د) $-f(x)$



✓

الف) $x^2 - 5x + 6 > 0$

الفاصلين

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

2 3

$\frac{x}{y} + \frac{2}{p} - \frac{3}{p} +$

$(-\infty, 2) \cup [3, +\infty)$

ب) $x^2 - 4x + 4 < 0$

$(x-1)(x-4) < 0$

1 4

$\frac{x}{y} + \frac{1}{p} - \frac{4}{p} +$

~~...~~

ج) $x^2 + 4x + 4 \geq 0$

$(x+1)(x+4) \geq 0$

-1 -4

$\frac{x}{y} + \frac{-1}{p} - \frac{-4}{p} +$

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

✓

$$د) \quad n^2 - 7n + 4 \leq 0$$

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

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

$$[1, 4]$$

$$الف) \quad \frac{n^2 - 3n + 2}{n-4} < 0$$

مساوی صفرتواره

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

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

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

ل.ص

$$ب) \quad \frac{n^2 - 1}{n^2 - 4n + 4} \geq 0$$

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

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

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

$$الف) \quad y = \sqrt{\frac{n^2 - 1}{n^2 - n}}$$

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

بجسید غلط گیرندام

✓

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

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

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

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

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

(P)

✓

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

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

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

$$الف) y = \sqrt{x - \sqrt{x-2}}$$

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

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

(P)

✓

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

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

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

$$x-2 \leq 14$$

$$(-1 \leq x)$$

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

$$2 \leq x \leq 11$$

$$D_f = [2, 11]$$

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

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

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

$$x-2 \leq 9$$

$$(x \leq 11)$$

$$ج) y = \sqrt{x - 2x^2}$$

$$x - 2x^2 \geq 0$$

$$2x^2 \leq x$$

$$x^2 \leq \frac{1}{2}$$

$$-\sqrt{\frac{1}{2}} \leq x \leq \sqrt{\frac{1}{2}}$$

$$|x| \leq \sqrt{\frac{1}{2}} \quad D_f = [-\sqrt{\frac{1}{2}}, \sqrt{\frac{1}{2}}]$$

$$1) y = \sqrt{|x|-9}$$

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

$$|x| \geq 9$$

$$|x| \geq 9$$

$$x \geq 9$$

$$x \leq -9$$

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

$$د) y = \sqrt{\frac{|x|+1}{|x|-2}}$$

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

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

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

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

$$x \geq 0$$

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

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

(2)

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

-1

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

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

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

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

$$\sin x \neq -1 \quad \sin x \neq -\frac{1}{1} \quad x \neq \frac{3\pi}{2}, \frac{7\pi}{2}$$

$$D_f = \mathbb{R} - \left\{ 2k\pi + \frac{3\pi}{2}, 2k\pi + \frac{7\pi}{2} \right\}$$

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

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

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

(2)

$$\cot x - 1 \neq 0 \quad \cot x \neq 1 \quad x \neq \frac{\pi}{4}, \frac{5\pi}{4}$$

$$D_f = \mathbb{R} - \left\{ \frac{k\pi}{4}, \frac{k\pi}{4} + \frac{\pi}{2} \right\}$$

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

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

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

$$\sin^2 x \neq \frac{2}{1} \quad \sin x \neq \pm \sqrt{\frac{2}{1}} \quad \sin x \neq \pm \frac{\sqrt{2}}{1}$$

$$D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{4}, k\pi + \frac{3\pi}{4} \right\}$$

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

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

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

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

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

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

✓ (✓)

✓

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

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

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

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

$$R = \{0\}$$

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

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

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

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

(✓)

✓