

$$R_f = [0, g(f))$$

الف

$$\log y = \underbrace{\sin x}_{-1 \leq \sin x \leq 1} + e^x$$

$$3 \leq \leq 5$$

$$r \leq \log y \leq \omega \rightarrow 10^r \leq y \leq 10^\omega$$

$$R_p = [10^4, 10^5]$$

$$y^{a-1} - ay = x^b - f \rightarrow x^b (y-1) = ay - f \rightarrow x = \sqrt[b]{\frac{ay-f}{y-1}} \rightarrow \boxed{\frac{f}{a}}$$

$$+ \quad - \quad +$$

$$\sqrt{(-\infty, \frac{1}{9}]} \cup (1, +\infty) \xrightarrow{h|} [0, \frac{1}{9}] \cup (1, +\infty)$$

$$a + brc = 0 + \frac{r}{r} + 1 = \frac{d}{r}$$

$$\underbrace{x + \frac{1}{x}}_{\geq 2} + \left(\sqrt{x + \frac{1}{x}} \right) \rightarrow \sqrt{[x + \infty)} \rightarrow [\sqrt{x + \infty)}$$

پس $x < 0$ است $\rightarrow x + \frac{1}{x} \geq 0$

$$[2\sqrt{2} + 2) : 2$$

$$x + \frac{1}{x} \geq 2$$

$$r^2 + r \sin \alpha - \sin \alpha = \sin^2 \alpha \rightarrow -\sin^2 \alpha + r \sin \alpha + r^2$$

$$\xrightarrow{\text{mod}} 1 \rightarrow 2$$

$$\frac{1}{2} \rightarrow C$$

$$\sqrt[4]{5^2} - 2 = 1 \rightarrow x$$

$R_f [0, \epsilon]$

$$D: [1, 9]$$

$$\textcircled{1} \rightarrow -\frac{1}{\mu} + 1 = \frac{19}{\mu}$$

$$(9) \rightarrow -r + 10 = \frac{r1}{\mu}$$

$$K\left(\frac{ad}{\mu}\right) + \frac{rd}{\mu} = \frac{rda}{\mu} = W$$

A handwritten diagram illustrating a nested loop structure. It consists of several concentric rectangular paths. The outermost path is labeled '1' at the top left. Inside it, a second path is labeled '2' at the top left. A third path is labeled '3' at the top left. A fourth path is labeled '4' at the top left. The innermost path is labeled '5' at the top left. Arrows indicate the direction of flow, generally moving downwards and then to the right, suggesting a sequential process through the nested loops.

$$\begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix} = 1$$

$$\begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix} = 1 \quad (a=0)$$

$$\frac{1-0}{1-1} = 1$$

$$x + C = y \rightarrow \begin{vmatrix} 1 & 0 \\ 0 & 1 \end{vmatrix} \rightarrow y + C = 0$$

$$\begin{cases} a=0 \\ b=1 \\ c=-1 \end{cases}$$

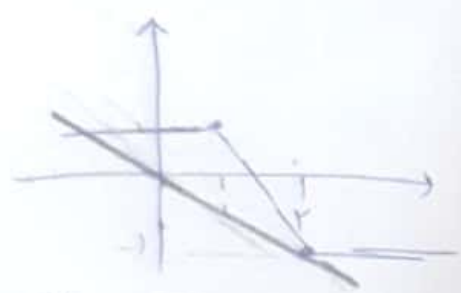
$$\sqrt{x^2 + F} \quad \sqrt{y^2 + F} = x$$

$$\sqrt{[5+x]} \rightarrow [2, 5+\infty)$$

$$x^2 + F = y$$

$$x^2 = -F + y$$

$$|x-2| + |y-1| = 1$$

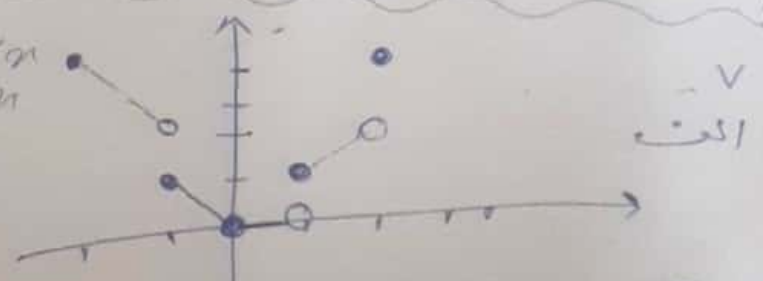


$$\begin{vmatrix} 1 & 0 \\ -1 & 0 \end{vmatrix} \quad k = -\frac{1}{2}$$

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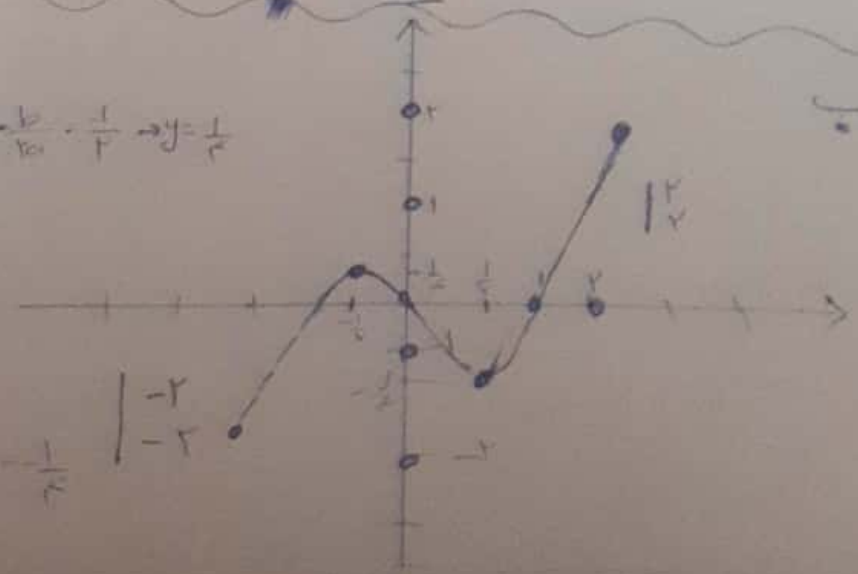
مکمل نفیس

$$x[x] \rightarrow \begin{cases} -2 \leq < -1 \rightarrow -2x \\ -1 \leq < 0 \rightarrow -x \\ 0 \leq < 1 \rightarrow 0 \\ 1 \leq < 2 \rightarrow x \\ \{2\} \rightarrow 2x \end{cases}$$



$$[0, 2) \cup (2, 4]$$

$$x|x| = x \rightarrow \begin{cases} -2 \leq < -1 \rightarrow -x^2 - x \\ -1 \leq < 0 \rightarrow -x^2 - x \\ 0 \leq < 1 \rightarrow x^2 - x \\ 1 \leq < 2 \rightarrow x^2 - x \\ \{2\} \rightarrow x^2 - x \end{cases}$$



$$\frac{b}{a} \cdot \frac{1}{x} \rightarrow y = \frac{1}{x}$$

حل المسألة

$$n \neq 0 \quad / \quad n \neq -1 \quad / \quad \underset{\substack{\downarrow \\ \neq 0}}{n} \cdot \underset{\substack{\downarrow \\ \neq -1}}{(n+1)} \neq 0$$

$$D: \mathbb{R} - \{0, -1\}$$

$$\frac{n+1}{n+1} + \frac{n}{n+1} + \frac{1}{n+1} = \frac{r(n+1)}{n(n+1)} \Rightarrow y = \frac{r}{n}$$

$\downarrow$
~~not~~
 $n \neq -1$

$$n = \frac{r}{y} \quad \text{by } y \neq 0$$

$$a+b = -r+0 = -r$$

$$n \neq -1 \rightarrow |y \neq -r|$$

$$\sqrt{a} = 1$$

(9)

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

$$\underbrace{(y-1)+1}_a + \underbrace{(-1+1)}_b + \underbrace{y-1}_c$$

$$b^2 - 4ac$$

↓

$$1y^2 + 14 - 14y - 1(y-1)(y-1)$$

$$y^2 - 14y + 15$$

$$\cancel{1y^2 + 14 - 14y} - \cancel{1y^2 - 14y + 15} = 0 \checkmark$$

$$\frac{+1y - 1\sqrt{15}}{1y - 1}$$

$\hookrightarrow 1 \neq y$

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

$$R = \{a, b\}$$

$$x \neq \pm 1$$

$$\frac{x^r + 1 \cdot x^r - a - r}{x^r + x} \cdot \frac{x^r - 1}{x + r}$$

$$\frac{1 \cdot x^r - r}{1 \cdot x^r - r}$$

$$\frac{(x^r - 1)(x + r)}{x^r - 1}$$

$x \neq \pm 1$

$$x + r = y \rightarrow y - r = x$$

$$\boxed{1 + 1 = 1}$$

$$a = 1 \rightarrow 1 = y - r \rightarrow y = 1$$

$$a = -1 \rightarrow -1 = y - r \rightarrow y = 1$$