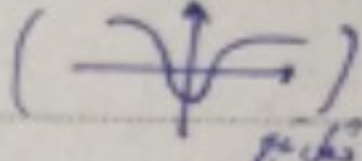
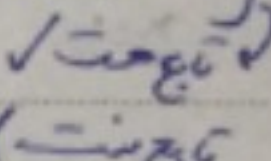


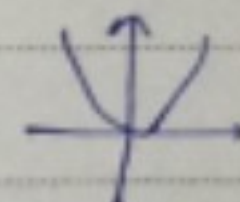
1- (الف) $y^2 - x^2 = x - 1 \rightarrow y^2 = x^2 + x - 1 \rightarrow \sqrt{\text{مربع}}$ 

ب) $x \cos y = y \cos x \rightarrow x = \frac{\pi}{4} \Rightarrow \frac{\pi}{4} \cos y = 0 \Rightarrow \cos y = 0 \Rightarrow y = 0, \pi, 2\pi, \dots (k\pi) \rightarrow \sqrt{\text{مربع}}$

ج) $\frac{x+y}{x} = \sqrt{xy} \rightarrow x+y = x\sqrt{xy} \rightarrow x - x\sqrt{xy} + y = 0 \Rightarrow (\sqrt{x} - \sqrt{y})^2 = 0 \Rightarrow \sqrt{x} = \sqrt{y} \rightarrow x=y$ 

د) $xy^2 + x^2 - y^3 - xy = 0 \rightarrow x \geq 0 \rightarrow -y^3 - xy = 0 \rightarrow y(y^2 - x) = 0 \rightarrow y = 0$
 $y^2 = x \rightarrow y = \pm\sqrt{x} \Rightarrow X \text{ مربع}$

2- (الف) $|y| + x^2 \geq xy$

$\Rightarrow xy \rightarrow \sqrt{x^2 y^2} \Rightarrow x^2 \geq xy - y \Rightarrow y \geq x^2$ 

$\sqrt{\text{مربع}}$

ب) $[y] + [x] = 1 \quad x \geq 0 \rightarrow [y] = 1 \Rightarrow y \in [1, 2) \Rightarrow X \text{ مربع}$

3. $f(x) = \begin{cases} x^2 - b & |x-1| \geq 2 \rightarrow x-1 \geq 2 \rightarrow x \geq 3 \quad x-1 \leq -2 \rightarrow x \leq -1 \\ a+x & 0 \leq x \leq 2 \end{cases}$

$x \geq 3 \rightarrow 11 - b = a + 4 \Rightarrow \underline{a+b \geq 11}$

4. $f(x) = \sqrt{a-bx-x^2} \quad D_f = [b, a] \rightarrow \frac{b}{-1+1} = \frac{a}{-1+1}$

$\Rightarrow -a^2 - ab + a = 0 \rightarrow -a(a+b-1) = 0 \Rightarrow \begin{cases} a=0 \text{ مرفوض (a=0)} \\ a+b-1=0 \text{ ①} \end{cases}$

$\Rightarrow -b^2 - b^2 + a = 0 \Rightarrow a \geq 2b^2 \text{ ②} \rightarrow 2b^2 + b - 1 = 0 \rightarrow (2b-1)(b+1) = 0 \Rightarrow \begin{cases} b=1 \rightarrow a \geq 2 \\ b=\frac{1}{2} \rightarrow a \geq \frac{1}{2} \end{cases}$

$\rightarrow \underline{a+b \geq 1}$

5. $y = \frac{x}{\sqrt{ax^2+bx+c}} \quad D_f = (-\infty, r) \rightarrow ax^2+bx+c \quad x < r$

① $\sqrt{\text{مربع}}$ $\frac{x}{x}$

$\Rightarrow fa+rb+c \geq 0 \quad ax^2+bx+c \xrightarrow{x \rightarrow 0} 0+0+c > 0 \Rightarrow c > 0$

① $\Rightarrow a \geq 0 \rightarrow b \geq c \rightarrow x < -\frac{c}{b} \rightarrow -\frac{c}{b} = r \Rightarrow c = -rb \rightarrow b < 0$

$\Rightarrow ra+c-rb \rightarrow 0+(-rb)+rb = 0$

30) $\frac{r_{mb}}{r+a} \sigma_1 + b$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$\frac{r+a}{r+a} = 1 \Rightarrow r+a = f+r \Rightarrow \underline{b=f}$$

$$|x|-1 > 0 \rightarrow |x| > 1 \rightarrow x > 1 \quad x < -1 \Rightarrow D_f = (-\infty, -1) \cup (1, +\infty)$$

$$|n| - [n] \neq 0 \rightarrow n \notin \mathbb{W} \Rightarrow D_f = \mathbb{R} - \mathbb{W}$$

$$x \geq 0 \rightarrow D_f = [0, +\infty)$$

$$\left[r_n - \frac{1}{r} \right] + \left[r_n + \frac{w}{r} \right] > 0 \rightarrow \left[r_n - \frac{1}{r} \right] + \left[r_n + \frac{w}{r} \right] + 1 - i > 0$$

$$\rightarrow [r_n - \frac{1}{p} + 1] + [m + \frac{r}{r} - 1] > 0 \rightarrow r[r_n + \frac{1}{r}] > 0 \rightarrow [r_n + \frac{1}{r}] > 0 \Rightarrow r_n + \frac{1}{r} \geq 1$$

20 $\rightarrow x \geq \frac{1}{k} \Rightarrow P_{f^2}[\frac{1}{k}, +\infty)$

$$D_f = (b, c)$$

$$\rightarrow P_{n-a} > 0 \rightarrow n > \frac{a}{r}$$

$$\downarrow 1 - \log(r_{n-a}) \geq 0 \rightarrow \log(r_{n-a}) \leq 1 \rightarrow r_{n-a} \leq 10 \rightarrow n \leq \frac{a+10}{r}$$

$$\frac{a}{r} < n \leq \frac{a+b}{r}$$

$$\left. \begin{array}{l} b < \pi < c \\ a + \frac{a}{r} \geq b \\ a + \frac{a}{r} \geq c \end{array} \right\} \Rightarrow a + b \geq c \Rightarrow \underline{c - b \geq a}$$