

$$2) \phi(u) = u + \frac{1}{u} + r\sqrt{u + \frac{1}{u}} \rightarrow t + r\sqrt{t}$$

$$N = [r, r\sqrt{r}] + \infty)$$

$$R \geq r \Leftarrow \phi(u) \cdot \phi'(u) + \frac{1}{u}$$

$$1) y = (u - \sin u)(1 + \sin u) \Rightarrow \sin u = 1 \rightarrow r \times r = \varepsilon$$

$$\sin u = -1 \rightarrow r \times 0 = 0$$

$$N = [0, \varepsilon]$$

$$\begin{array}{llll} 1 \rightarrow \frac{r\phi}{r} & r \rightarrow \phi & \omega \rightarrow \frac{r\phi}{r} & v \rightarrow \frac{r\phi}{r} \quad \phi \rightarrow v \\ r \rightarrow \frac{r\phi}{r} & r \rightarrow \frac{r\phi}{r} & \phi \rightarrow \phi & \phi \rightarrow \frac{r\phi}{r} \\ r\phi + r\phi + r\phi + r\phi + r\phi + r\phi & + \phi + \phi + v & = & v\phi \end{array}$$

$$f(u) = \sqrt{au^r + bu + c}$$

$$rb + c = 0 \rightarrow b = 1, c = -r$$

$$rb + c = 1$$

$$2) a = 0 \rightarrow \phi(u) = (r, +\infty) \text{ into } \phi(u) = \sqrt{u^r + \varepsilon}$$

$$g(u) = \sqrt{bu^r + au - rc} \rightarrow \sqrt{u^r + \varepsilon}$$

$$N = [r, +\infty)$$

$$f(u) = \frac{u^r - ru}{u + r} \rightarrow u \frac{(u-r)(u+r)}{u+r} \rightarrow u(u-r) \rightarrow ur - ru \rightarrow \text{not } -1$$

$$\phi = [N - \{a, b\}] \rightarrow a = -r, b = \varepsilon$$

$$N \neq [c, +\infty) - \{1\} \rightarrow c = -1$$

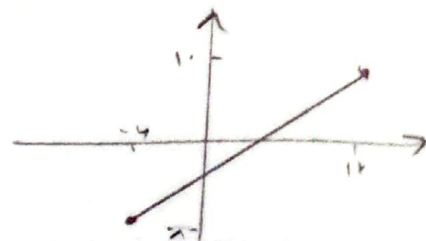
$$\phi\left(\frac{a+b}{rc}\right) = \phi(-1) \Rightarrow \mu$$

$$y = \sqrt[r]{u^r + au^r + bu - 1} \rightarrow \sqrt[r]{(u-r)^r}$$

$$\phi = [-\varepsilon, 1], N = [-1, +1]$$

$$= \sqrt{x^r - \frac{4u^r}{a} + \frac{11ra}{b} - \frac{1}{c}}$$

$$\phi(u) = u - r$$

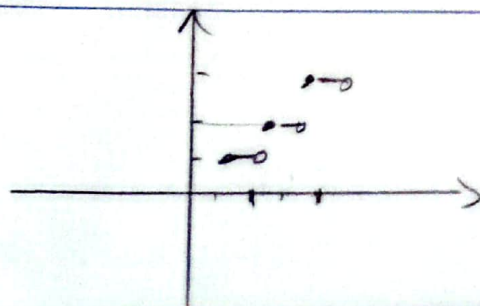


$$1) y = [a] + [u + \frac{1}{r}] \quad (\frac{1}{r}, r)$$

$$[\frac{1}{r} > 1] \rightarrow y = 1$$

$$[1 > \frac{1}{r}] \rightarrow 1 + 1 = r$$

$$[\frac{r}{r} > r] \quad r + 1 = r$$



(1)

الف) $f(u) = \sqrt{5} \sin^2(u + \frac{\pi}{4}) - 1$

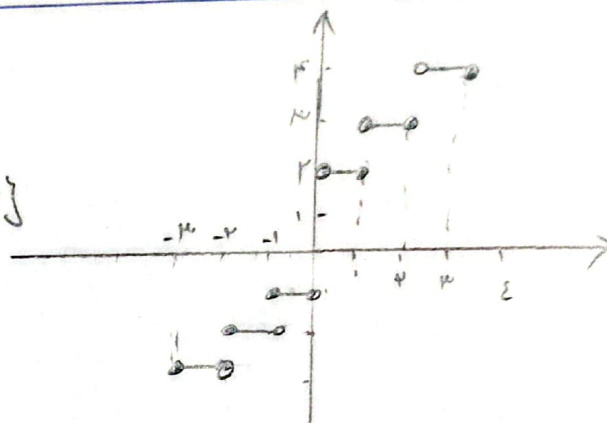
$\sin \rightarrow 1 \rightarrow \sqrt{5} - 1$
 $\rightarrow 0 \rightarrow -1$ $D = [-1, \sqrt{5} - 1]$

ب) $g(u) = \sqrt{5} \cos^2 u - 2$

$\cos \rightarrow -1 \rightarrow -\sqrt{5}$
 $\rightarrow 1 \rightarrow -1$ $D = [-\sqrt{5}, -1]$

$y = \frac{x}{|x|} + [x]$

$x < 0 \rightarrow -1 + [x]$ $0 < x < \pi \rightarrow 1 + [x]$

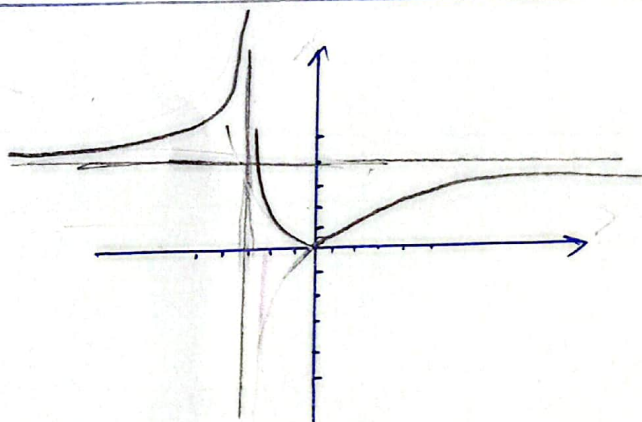


(2)

$y = \left| \frac{x+1}{x+3} \right|$

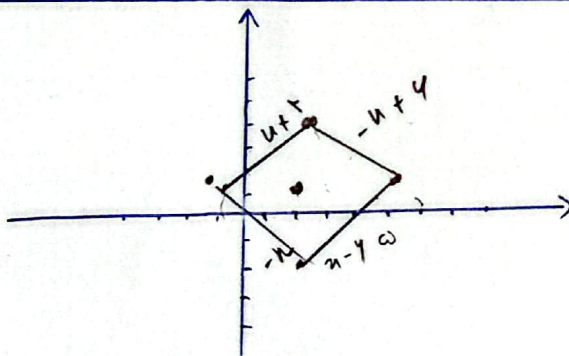
محدوده $x \rightarrow$ $\frac{1}{x} \rightarrow -3$

محدوده $y \rightarrow \frac{1}{x} \rightarrow 4$



(3)

$|x-2| + |y-1| = 3$



(4)