

(1)

$$y = \frac{|u|+1}{|u|-r}$$

$$|u| = \frac{1+ry}{y-1}$$

$$\frac{1}{1} = \frac{1}{1} + \frac{1}{1}$$

$$y|u| - ry = |u| + 1 \rightarrow |u|(y-1) = 1+ry \Rightarrow \boxed{N = (-\infty, -\frac{1}{y}) \cup (1, +\infty)}$$

$$\rightarrow y = \frac{u^r + 1}{|u|} \rightarrow$$

$$\begin{cases} u > 0 & u + \frac{1}{u} \rightarrow (r, +\infty) \\ u < 0 & \end{cases}$$

$$\boxed{a + \frac{1}{a} \rightarrow (r, +\infty)}$$

$$\frac{-u-1}{-(u+\frac{1}{u})} \Rightarrow (r, +\infty)$$

میں نے یہاں پر
نکال دیا ہے

(2)

$$y = \frac{u^r + ru - r}{u+r} \rightarrow yu + ry = u^r + ru - r \rightarrow u^r + u(r-y) - r - ry = 0$$

$$u > r = -(r-y) \pm \sqrt{(r-y)^2 - 4(-r-ry)}$$

$$r + y^2 - 4y + 4 + 4ry > 0$$

$$y^2 + 4y + 4r > 0 \rightarrow (y+2)(y+2r)$$

$$N = [-\infty, -y] \cup [-r, +\infty)$$

$$\frac{1}{1} = \frac{1}{1} + \frac{1}{1}$$

(3)

$$f(u) = \frac{u^r - u + 1}{u^r - u + 1} \Rightarrow$$

$$\frac{(u - \frac{1}{r})^2}{(u - \frac{1}{r})^2 + \frac{r}{r}}$$

$$N = [0, 1)$$

(4)

$$y = \sqrt{-u^r + 4u - 1}$$

$$\Delta = \frac{4}{r} \rightarrow r$$

$$N = [0, \sqrt{r}]$$

$$\rightarrow y = \sqrt{4u^r - 4u}$$

$$\Delta = 4$$

$$-\frac{\Delta}{4a} \Rightarrow -1 \quad N = [r, +\infty)$$

(5)

$$y = \sqrt{4u^r - 4u + 4}$$

$$N = (-\infty, +\infty)$$

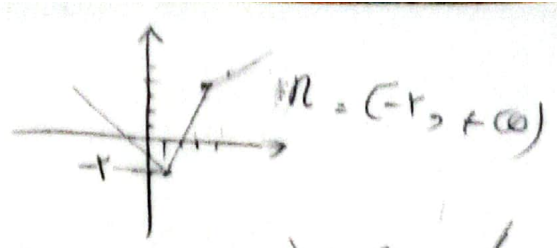
$$\rightarrow y = \sqrt{4\left(\frac{u^r + 1}{u}\right)}$$

$$u + \frac{1}{u} \xrightarrow{u > 0} r : [r, +\infty) \rightarrow [1, +\infty)$$

یہاں سے

ا) $y = |u-1| - |u-3|$

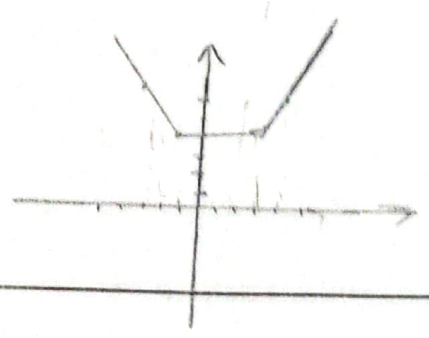
0	1	3	2
-1	-1	2	0



→ $|u-1| + |u+1|$

-1	-1	1	1
0	2	2	0

$u = [1, +\infty)$



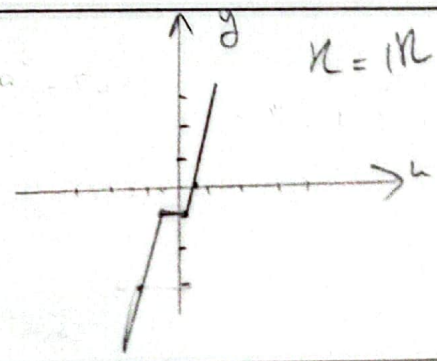
ا) $|u-1| - |u+1| \leq 1$

$u > 1 \rightarrow u-1 - (u+1) \rightarrow -2 \rightarrow -2 \leq 1 \rightarrow u > 1$
 $-1 < u \leq 1 \rightarrow -u+1 - (u+1) \rightarrow -2u \rightarrow -2u \leq 1 \rightarrow u > -1/2$
 $u < -1 \rightarrow -u+1 - (u+1) \rightarrow -2u \rightarrow -2u \leq 1 \rightarrow u > -1/2$

$u = (-\infty, -1/2] \cup [1, +\infty)$

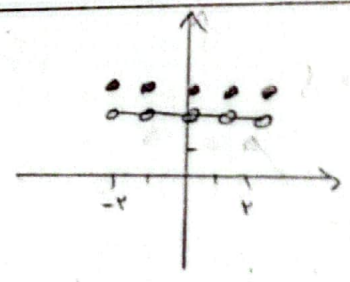
ج) $y = 3u - |u+1| + |u|$

-1	-1/2	0	1/2
-3	-1	-1	0

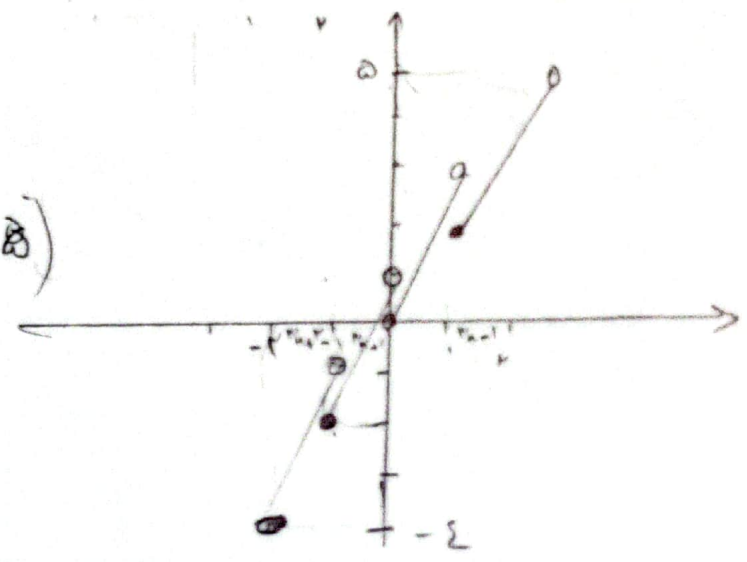


ا) $y = [u] + [u-1]$

$1 + 1$
 $-1 + 3$
 $-2 + 2$



→ $u = [u]$ $u = [-\varepsilon, 0)$



(1.)

$$y = \sin^2 u - \sin u + 1$$

$$\begin{aligned} \nearrow \sin u &= 1 \rightarrow 1 \\ \rightarrow \sin u &= \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} \rightarrow \frac{1}{2} \rightarrow \frac{1}{2} - \frac{1}{2} + 1 \\ \searrow \sin u &= -1 \rightarrow 1 + 1 + 1 = 3 \end{aligned}$$

(2.)

$$R = \left[\frac{\pi}{2}, \pi \right]$$

$$\therefore) \sin^2 + \sin^2 + 1$$

$$\begin{aligned} \nearrow \sin u &= 1 \rightarrow \pi \checkmark \\ \rightarrow \sin^2 u &= -\frac{1}{2} \times \\ \searrow \sin u &= 1 \checkmark \end{aligned}$$

$$R = [1, \pi]$$