

$$f(u) = \left(\frac{1}{r}\right)^{u-r} - 1$$

$$y = \sqrt{x^r f(u+1)}$$

$$(u+1) \rightarrow \left(\frac{1}{r}\right)^{u+1} - \left(\frac{1}{r}\right)^u \Rightarrow \left(\frac{1}{r}\right)^u - 1$$

$$\sqrt{x^r \left(\frac{1}{r}\right)^{u+1}}$$

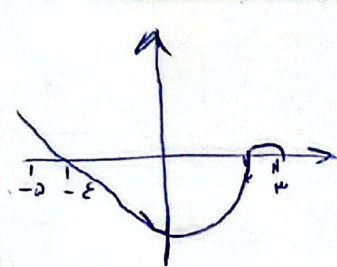
$$x^r \geq 0 \rightarrow x \geq 0 \rightarrow D = [0, +\infty)$$

$$f(u) = \sqrt{x + |u+r|}$$

$$f(-u) = \sqrt{-u + |-u+r|}$$

I) $u \leq r : \sqrt{-ru+r} \rightarrow -ru+r \geq 0 \rightarrow -ru \geq -r \rightarrow u \leq 1$

II) $u > r : \sqrt{-u-r+u} \Rightarrow D = (-\infty, 1]$



$$y = \sqrt{\frac{x-1}{f(u)}}$$

	-ε	1	r	u
x=1	-	-	0	+
f(u)	+	0	-	0
	-	+	-	+

$$D = (-r, 1] \cup (r, u)$$

$$y_1 = \frac{1}{ru^r - vu^r - ru - r}$$

$$y_2 = \frac{1}{ru^r + au + b}$$

$$ru^r + au + b = (ru^r + u + 1)(ru^r + u - r)$$

$$\sqrt{-r}x \leftarrow a = b = 1$$

$$\sqrt{r}x \leftarrow b = -r, a = 1$$

$$f(u) = u^r + u$$

$$y = \sqrt{f(u) - f\left(\frac{r}{u}\right)}$$

$$f(u) - f\left(\frac{r}{u}\right) = u^r + u - \frac{r}{u} - \frac{r}{u^r}$$

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

$$u^r \geq r \rightarrow |u| \geq r \rightarrow u \geq r \text{ or } u \leq -r$$

$$D = \mathbb{R} - [-r, r]$$

$$f(u^r + u) = ru^r - 1 \quad f(1) + f(r) = ? \quad (1)$$

$$u^r + u = 1 \rightarrow u = r \xrightarrow{ru^r - 1} (1)$$

$$u^r + u = r \rightarrow u = 1 \xrightarrow{ru^r - 1} (1)$$

$$f(u) = u^r - ru^r + ru = (u-r)^r + r$$

$$g(u) = u^r + ru^r + ru = (u+r)^r - r$$

$$\frac{g(\sqrt[r]{r} - r)}{f(\sqrt[r]{r} + r)} = \frac{(\sqrt[r]{r} - r + r)^r - r}{(\sqrt[r]{r} + r - r)^r + r} \rightarrow \frac{-r}{1} = (-r)$$

$$f(u) = \sqrt{u + \varepsilon \sqrt{u - \varepsilon}}$$

$$g(u) = \sqrt{u - \varepsilon \sqrt{u - \varepsilon}}$$

$$\frac{a+b}{c} = -\frac{1}{r}$$

$$f(u) + g(u) = \sqrt{u - \varepsilon + \varepsilon \sqrt{u - \varepsilon} + \varepsilon} + \sqrt{u - \varepsilon - \varepsilon \sqrt{u - \varepsilon} + \varepsilon}$$

$$r\sqrt{u - \varepsilon} = a + b\sqrt{u + c} \rightarrow a + b = r\sqrt{c = -\varepsilon}$$

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

$$g(u) = \left\{ (r, 1) (1, 0) (r, \omega) (0, \varepsilon) \right\}$$

$$\mathcal{D}f = K - \{1, 4\}$$

$$\frac{f}{g} = \left\{ (r, \frac{1}{-1}) (0, 4) \right\}$$

$$g(u) = \{(-r, \omega) (1, -1) (r, r) (-1, 0)\}, \quad f(u) = \{(1, r) (r, -1) (r, r) (-1, r)\}$$

$$\text{if: } f(ru) = \left\{ \left(\frac{1}{r}, r \right) \left(\frac{r}{r}, -1 \right) (r, r) \left(-\frac{1}{r}, r \right) \right\}$$

$$\text{if: } f(u^r) = (1, r) (\sqrt{r}, -1) (r, r)$$

$$f \circ g^r(u) + 1 = \{(-r, \omega) (1, r) (r, \omega) (-1, 1)\}$$

$$\text{if: } \frac{rf}{g} = \{(1, -r) (r, -1)\}$$

$$rf = 1, 2 \quad r, -r \quad 0, \varepsilon \quad -1, 1r$$