

-1

$$m = 4$$
$$n = 2$$

$$n = 4$$

4

μ

$(0, \infty)$ a.s.

7

کے لیے

4

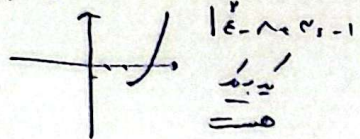
$$y = \frac{r_{n+1}}{u-r}$$

کے لیے

4

$$y = u^r + u \quad u \geq 0$$

ج) $y = u^r - \epsilon u + r, \quad u \in (r, +\infty)$



$y = u^r - \epsilon u + r + 1 - 1 = (u - r)^r - 1$

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

-V

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

$f^{-1}(u) = au + b - \sqrt{u - c}$

$\sqrt{u + \frac{1}{r}} = \sqrt{y} + \frac{1}{r}$

$\sqrt{y} = \sqrt{u + \frac{1}{r}} - \frac{1}{r} \xrightarrow{\text{raise to power 2}} y = u + \frac{1}{r} + \frac{1}{r} - \sqrt{u + \frac{1}{r}} \Rightarrow y = u + \frac{1}{r} - \sqrt{u + \frac{1}{r}}$

$a = 1$

$c = -\frac{1}{r}$

$b = \frac{1}{r}$

$a + rb + rc = 1 + 1 - 1 = 1$

$y = \frac{u}{\sqrt{u^2 - r}}$

$f(u, 1) = f(u_r)$

$\frac{u_1}{\sqrt{u_1^2 - r}} = \frac{u_r}{\sqrt{u_r^2 - r}} \xrightarrow{\text{cross multiply}} \frac{u_1^r}{u_1^r - r} = \frac{u_r^r}{u_r^r - r}$

$u_1^r u_r^r - r u_1^r = u_1^r u_r^r - r u_r^r \Rightarrow u_1^r = u_r^r \Rightarrow u_1 = \pm u_r \rightarrow \text{u and u_r are both positive} \Rightarrow u_1 = u_r$

$u = \frac{y}{\sqrt{y^2 - r}} \Rightarrow u^r = \frac{y^r}{y^r - r} \Rightarrow u^r y^r - r u^r = y^r \Rightarrow y^r (u^r - 1) = r u^r \Rightarrow y^r = \frac{r u^r}{u^r - 1}$

$y = \pm \frac{\sqrt{r} u}{\sqrt{u^2 - 1}} \Rightarrow y = \frac{\sqrt{r} u}{\sqrt{u^2 - 1}}$

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

$g(u) = \sqrt{u} - 1$

$f^{-1}(-\frac{r}{a}) + g^{-1}(-\frac{r}{a})$

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

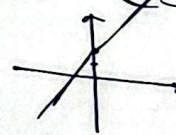
$0u + r|u| + r = 0$

$\sqrt{u} - 1 = -\frac{r}{a} \Rightarrow \sqrt{u} = \frac{r}{a} \Rightarrow u = \frac{a^2}{r^2}$

$-\frac{r}{a} + \frac{a}{r} = \frac{-a^2 + r^2}{ra} = \frac{r^2 - a^2}{ra}$

$\frac{r}{u+r} + \frac{r}{u+r}$

$u = -\frac{r}{r}$



$f^{-1}(u) = \sqrt{u-1}$

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

$g(u) = u^r + 1 + \sqrt{u^r + 1}$

$y = \sqrt{u-1} \Rightarrow u = y^2 + 1 \Rightarrow u^r = (y^2 + 1)^r \Rightarrow y^2 = u^{\frac{1}{r}} - 1$

$g(u) = 12 \Rightarrow u = ?$

$u^r + 1 + \sqrt{u^r + 1} = 12$

$g^{-1}(12)$

$t^r + t - 12 = 0 \Rightarrow (t+1)(t-11) = 0$

$t = -1 \Rightarrow \sqrt{u+1} = -1 \Rightarrow u = -2$

$t = 11 \Rightarrow \sqrt{u+1} = 11 \Rightarrow u = 120$

$u^r + 1 = 12 \Rightarrow u^r = 11 \Rightarrow u = \sqrt[r]{11} \Rightarrow u = 11$