

(1)

$$y = \frac{a \cdot r}{r^2 + r^2 - a^2 + r} \xrightarrow{\text{جمله‌ها را یک‌دفعه در 1 ضرب می‌کنیم}} \frac{1}{r} \left| \begin{array}{ccc|c} 1 & 1 & -a & 1 \\ r & 0 & -a & 0 \end{array} \right|$$

$$\rightarrow (a-1)(r^2 + a^2 - r)$$

$$Df = R - \left\{ -r, \frac{1}{r}, 1 \right\}$$

$$\frac{-a \pm \sqrt{r^2 + r}}{r} \quad \left(\frac{1}{r}, -r \right)$$

$$y = \frac{a \cdot r}{r^2 + 9a^2 + 1 \cdot a \cdot r} \xrightarrow{\text{جمله‌ها را یک‌دفعه در 1 ضرب می‌کنیم}} \frac{-1}{r} \left| \begin{array}{ccc|c} 1 & 1 & 9 & 1 \\ r & 0 & 9 & 0 \end{array} \right|$$

$$\rightarrow (a+1)(r^2 + 9a^2 - r)$$

$$Df = R - \left\{ -r, -1, -\frac{1}{r} \right\}$$

$$\frac{-9r \pm \sqrt{81 - r^2}}{r} \quad \left(-r, -\frac{1}{r} \right)$$

-2

$$y = \frac{a \cdot r}{r^2 - r^2 + r^2 a - 1} \xrightarrow{\text{جمله‌ها را یک‌دفعه در 1 ضرب می‌کنیم}} \frac{1}{r} \left| \begin{array}{ccc|c} 1 & 1 & -r & -1 \\ 1 & -1 & 1 & 0 \end{array} \right|$$

$$R - \{1\}$$

$$\frac{1 \pm \sqrt{1 - r^2}}{r} \quad \frac{a^2 - a + 1}{r}$$

$$y = \sqrt{\frac{a+r}{r^2 - r^2 + r^2 a - 1}} \rightarrow -r \text{ به } +1 \text{ به}$$

$$\frac{-r}{r} \left| \begin{array}{c} 1 \\ \phi - \phi - r \end{array} \right|$$

$$Df = (-\infty, -r) \cup (1, +\infty)$$

-3

$$y = \frac{r}{a^2 - a^2 a - 11 - r^2 a + a} \xrightarrow{\text{جمله‌ها را یک‌دفعه در 1 ضرب می‌کنیم}} \frac{1}{r} \left| \begin{array}{ccc|c} 1 & 1 & -a & 1 \\ 1 & -1 & 1 & 0 \end{array} \right|$$

$$a^2 - a^2 a - 11 - r^2 a + a$$

$$a^2 - a^2 a - 11 - r^2 a + a$$

$$a^2 + r^2 a + 1$$

$$R - \{0, 1, 11\}$$

2(a+1)

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2(a+1)(a+r)

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

$$R = \left\{ \frac{r}{r}, 1 \right\}$$

$$y = \sqrt{|x+1| - |x+r|}$$

$$\begin{array}{c|c|c} \frac{r}{r} & \frac{1}{r} & \\ \hline -x+r & -x-r & x-r \\ \hline +1 & -1 & 1 \end{array}$$

$$\begin{array}{c|c|c} -r & \frac{1}{r} & \\ \hline -x+r & -x-r & x-r \\ \hline + & - & - \end{array}$$

$$Df = (-\infty, -\frac{r}{r}] \cup [1, +\infty)$$

$$y = \log_r (1 - \log_r x)$$

$$x > 0$$

$$-d$$

$$1 - \log_r x > 0$$

$$1 > \log_r x$$

$$Df = (0, r)$$

$$r > x$$

$$y = \log_r \left(1 - \log_{\frac{1}{r}} x \right)$$

$$x > 0$$

$$1 - \log_{\frac{1}{r}} x > 0$$

$$1 > \log_{\frac{1}{r}} x$$

$$Df = \left(\frac{1}{r}, +\infty \right)$$

$$\frac{1}{r} < x$$

$$f(x) = \sqrt{\log_2 \log_2 x}$$

$$x > 1$$

$$-s$$

$$x > 1$$

$$\log_2 x > 1$$

$$\log_2 x > 1$$

$$x > 1$$

$$(x-1) > 1$$

$$Df = (1, 2]$$

$$x > 1$$

$$x > 1$$

$$x > 1$$

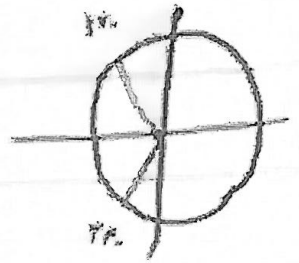
$$x > 1$$

$$x > 1$$

$$x > 1$$

$$y = \log(r \cos a + 1)$$

$$r \cos a + 1 > 0$$



$$r \cos a > -1$$

$$Df = R \left(r \cos a + 1 \right) = \frac{1}{r}$$

$$y = \log \frac{a-1}{a+1}$$

$$1 - \frac{a-1}{a+1} > 0$$

$$Df = \left(r \cos a - \frac{r}{r}, r \cos a + \frac{r}{r} \right)$$

$$\log \frac{a-1}{a+1} > 0$$

$$\frac{-1}{1-0} = -1$$

$$\frac{a-1}{a+1} > 1$$

$$\frac{a-1-a-1}{a+1} > 0$$

$$\frac{-2}{a+1} > 0$$

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

$$\frac{-1}{1-0} = -1$$

$$\frac{-2}{a+1} > 0$$

$$Df = (-\infty, -1)$$

$$\sqrt{(a+2) a^2 + a + b}$$

$$a+2 = 0$$

$$-1$$

$$\sqrt{-2a+b}$$

$$Df = (-\infty, 3]$$

$$-2a+b = 0 \Rightarrow b = 2a$$

$$f(a) = \sqrt{a^2 + 2a + 1 - m^2}$$

$$a < 0$$

$$-9$$

$$f = f(r, m)$$

$$1 - (-1) = 2$$

$$f = 1 + f_m$$

$$\frac{-1}{1-0} = -1$$

$$f_m = f' < -1$$

$$f(a) = \sqrt{f-a^2}$$

$$[-2, 3]$$

$$f = a^2$$

$$1$$

هذا هو الشكل النهائي

$$\{1, -1, \dots, 1, 1\}$$

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