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$$y = \frac{a \cdot r}{r^2 + r^2 - a^2 + r} \Rightarrow \frac{1}{r} \mid \frac{r}{r^2} \mid \frac{-a^2}{r} \mid \frac{r}{r^2}$$

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

$$y = \frac{a \cdot r}{r^2 + 9a^2 + 1 \cdot a \cdot r} \Rightarrow \frac{-1}{r} \mid \frac{r}{r^2} \mid \frac{9}{r^2} \mid \frac{1}{r^2} \mid \frac{r}{r^2}$$

$$Df = R - \left\{ -r, -1, -\frac{1}{r} \right\} \checkmark \quad \frac{(a+1)(r^2 + 9a^2 + r)}{-r \pm \sqrt{r^2 + 9a^2 - r^2}} \quad (-r) \quad \left(-\frac{1}{r} \right)$$

$$y = \frac{a \cdot r}{r^2 - r^2 + a^2 - 1} \Rightarrow \frac{1}{r} \mid \frac{r}{r^2} \mid \frac{-a^2}{r^2} \mid \frac{-1}{r^2} \mid \frac{r}{r^2}$$

$$R - \{1\} \checkmark \quad \frac{1}{r} \mid \frac{r}{r^2} \mid \frac{-a^2}{r^2} \mid \frac{-1}{r^2} \mid \frac{r}{r^2}$$

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

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

$$y = \frac{r}{a^2 - a^2 + a^2 - 1 - r^2 + a^2} \Rightarrow \frac{1}{r} \mid \frac{r}{r^2} \mid \frac{-a^2}{r^2} \mid \frac{-1}{r^2} \mid \frac{r}{r^2}$$

$$a^2 - a^2 + a^2 - 1 - r^2 + a^2 = a^2 - r^2 - 1$$

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$$R - \{0, 1, a\} \checkmark$$

2(a+r)

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2(a+r)

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

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

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

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

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

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

✓

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

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$Df = (0, r)$ ✓

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

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

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

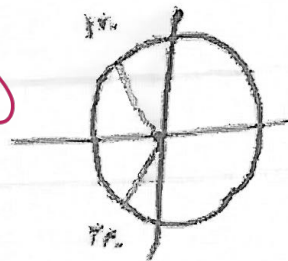
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$Df = (1, 4)$ ✓

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

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

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$$r \cos a > -1$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$a+2 = 0$$

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-1

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

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

$$-2a+b = 0$$

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

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

$$f'(a)$$

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-9

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

$$f = 1 + f_m'$$

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

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

$$f_m' = f' < -1$$

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

$$[-2, 3]$$

$$f = a^2$$

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هذا هو الجواب الصحيح

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

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