

$$\Rightarrow a_1 \Gamma = 0 \rightarrow a_2 \Gamma$$

$$\sqrt{x^r + y^r - m^r} \frac{\Delta \zeta}{r} (r^r) - f(1)(r - m^r) \rightarrow f m^r - 1 + f \rightarrow f m^r - f < 0$$

$1 - (-1) = 2$

$$\{ -r, -1, 0, 1, r \} \quad \hookrightarrow \quad f - a \cdot r \Rightarrow x^r \leq f \rightarrow -r \leq x \leq r \stackrel{\text{abs}}{\leq} \underbrace{r}_{\text{max}} \quad (1)$$

$$Df = \begin{bmatrix} -14 & 1 & 0 \end{bmatrix}$$

$$g = \sqrt{\frac{(x^r - 1)(x^r - x^{2r})}{x^r - 1}}$$

$$(x^r - 1)(x^r - x^{2r}) \geq 0$$

$$(x^r - x^{2r}) \geq 0 \rightarrow \frac{-r}{-1} + \frac{r}{1}$$

$$x^r - 1 \geq 0 \rightarrow x^r \geq 1 \rightarrow \boxed{x \geq 1}$$

$$D_f = (-\infty, -1) \cup [-1, \infty) \cup (1, +\infty)$$

$$y = \sqrt{f - |r - a|} \rightarrow f - |r - a| \geq 0 \rightarrow |r - a| \leq f \rightarrow \begin{matrix} -f & & f \\ -\frac{f}{2} & + & \frac{f}{2} \end{matrix} \left\{ \begin{matrix} \text{if } f \geq 0 \\ \text{if } f < 0 \end{matrix} \right.$$

$$y = \sqrt{1 - x|a|} \rightarrow x|a| \leq 1 \rightarrow x \leq 1 \rightarrow D_f = (-\infty, 1]$$

1, 2

$$y = \frac{\sqrt{3-|a-0|}-1}{\sqrt{3-|a-0|}-1} \rightarrow \frac{r-|a-0|-1}{r-|a-0|-1} > 0 \rightarrow |a-0| \leq r \rightarrow a-0 \leq r \rightarrow a \leq r$$

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$|a-0| \leq r \rightarrow a-0 \leq -r \rightarrow a \leq -r$

$D_f = [r, \infty)$

$$y = \frac{\sin^2 x - 1}{\cos x} \rightarrow \cos x \neq 0 \rightarrow \cos x \neq \frac{\pi}{2}, \frac{3\pi}{2} \rightarrow R - \left\{ \frac{\pi}{2}, \frac{3\pi}{2} \right\}$$

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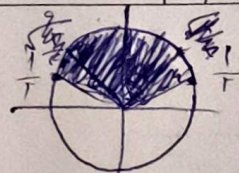
$$y = \frac{\cos x}{r(\cos x - 1)} \rightarrow r(\cos x - 1) \neq 0 \rightarrow \cos x \neq \frac{1}{r}$$

$\cos x = \frac{1}{r} \rightarrow x = \pm \arccos \frac{1}{r}$

$D_f = R - \left\{ \pm \arccos \frac{1}{r} \right\}$

$$y = \sqrt{r \sin x - 1} \rightarrow r \sin x - 1 \geq 0 \rightarrow \sin x \geq \frac{1}{r}$$

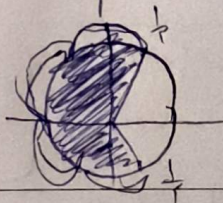
$D_f = \left[\arcsin \frac{1}{r}, \pi - \arcsin \frac{1}{r} \right]$



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$$y = \sqrt{1 - r \cos x} \rightarrow r \cos x \leq 1 \rightarrow \cos x \leq \frac{1}{r}$$

$D_f = \left[\pi - \arccos \frac{1}{r}, \arccos \frac{1}{r} \right]$



$$f(x) = \sqrt{\log \log (x-1)} \rightarrow \log (x-1) > 0 \rightarrow x > \frac{1}{r}$$

$$\log (x-1) > 0 \rightarrow x-1 > 1 \rightarrow x > 2$$

$$x > 1 \rightarrow x > 2$$

$$\log (x-1) \leq 0 \rightarrow x-1 \leq 1 \rightarrow x \leq 2$$

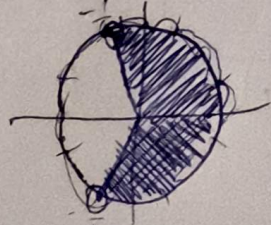
$$x \leq 2$$

$$x \leq 2 \rightarrow x \leq 2$$

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$$y = \log (r \cos x + 1) \rightarrow r \cos x + 1 > 0 \rightarrow \cos x > -\frac{1}{r}$$

$D_f = \left(\pi - \arccos \frac{1}{r}, \arccos \frac{1}{r} \right)$



1.

$$y = \sqrt{\log \frac{x-1}{x+1}} \rightarrow \log \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow x-1 \geq x+1 \rightarrow -2 \geq 0$$

$$\frac{x-1}{x+1} \geq 0 \rightarrow x > 1 \rightarrow D_f = (-\infty, -1)$$

$$3- \text{ب}) \frac{(n^2-1)(n^2-n^2)}{(n^2-1)} \geq 0 \rightarrow \frac{(n-1)(n+1)(n^2)(n-1)}{(n-1)(n^2+n+1)} \geq 0$$

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-1 0 1 3

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$D_f = (-\infty, -1] \cup \{0\} \cup [3, +\infty)$

$$4- \text{ب}) 3 - |n-5| \geq 0 \rightarrow |n-5| \leq 3 \rightarrow -3 \leq n-5 \leq 3 \rightarrow 2 \leq n \leq 8$$

$$\sqrt{3 - |n-5|} - 1 \neq 0 \rightarrow \sqrt{3 - |n-5|} \neq 1 \rightarrow 3 - |n-5| \neq 2 \rightarrow |n-5| \neq 2 \rightarrow n \neq 3, 7$$

$$D_f = [2, 8] - \{3, 7\} = [2, 3) \cup (3, 7) \cup (7, 8]$$