

$$\rightarrow a-2=0 \rightarrow a=2 \rightarrow y=\sqrt{2x+b} \rightarrow x=3, \sqrt{4+b}=0 \rightarrow b=-4$$

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$$x^2+2x+2-m^2 \geq 0 \rightarrow (x+1)^2+1-m^2 \geq 0 \rightarrow m^2 \leq 1 \rightarrow -1 \leq m \leq 1$$

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$$\rightarrow 1-(-1)=2$$

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$$f(x) = \frac{\sqrt{2-x^2}}{[x]+[-x]} \rightarrow 2-x^2 \geq 0 \rightarrow x^2 \leq 2 \rightarrow -\sqrt{2} \leq x \leq \sqrt{2} \rightarrow -2 \leq x \leq 2 \rightarrow \textcircled{a}$$

خرج هیچ وقت صفر نمی شود

if $x \in \mathbb{Z} \rightarrow [x]+[-x]=0$

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$$\sqrt{x^2+2x} \rightarrow x^2+2x \geq 0 \rightarrow x^2(x+2) \geq 0 \rightarrow \frac{-2 \pm \sqrt{4}}{-1 \pm 1} \rightarrow D_f = [-2, +\infty)$$

$$\rightarrow y = \sqrt{\frac{(x^2-1)(x^2-2x^2)}{x^2-1}} = \sqrt{\frac{(x+1)(x-1)(x^2)(x-2)}{(x-1)(x^2+x+1)}}$$

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$$\rightarrow D_f = (-\infty, -1) \cup \{0\} \cup [2, +\infty)$$

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$$y = \sqrt{|x-2|-3} \rightarrow |x-2|-3 \geq 0 \rightarrow |x-2| \geq 3 \rightarrow x-2 \geq 3 \rightarrow x \geq 5$$

$x-2 \leq -3 \rightarrow x \leq -1$

$D_f = (-\infty, -1) \cup [5, +\infty)$

$$\rightarrow y = \sqrt{2-|x-2|} \rightarrow 2-|x-2| \geq 0 \rightarrow |x-2| \leq 2 \rightarrow -2 \leq x-2 \leq 2 \rightarrow 0 \leq x \leq 4 \rightarrow D_f = [0, 4]$$

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$$\text{اذا } y = \sqrt{1-x|x|} \rightarrow 1-x|x| \geq 0 \rightarrow x|x| \leq 1 \xrightarrow{x \geq 0} x^2 \leq 1 \rightarrow 0 \leq x \leq 1 \quad \left\{ D_f = (-\infty, 1] \right\}$$

$$\xrightarrow{x \leq 0} x^2 \geq -1 \rightarrow -1 \leq x \leq 0$$

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

$$\rightarrow \sqrt{r-|x-a|} \neq 0 \rightarrow r-|x-a| \neq 0 \rightarrow -|x-a| \neq -r \rightarrow x \neq r, \vee$$

$$\rightarrow D_f = [r, \infty) - \{r, \vee\}$$

$$\text{اذا } y = \frac{\sin^r x - 1}{\cos x} \rightarrow \cos x \neq 0 \rightarrow \bigoplus \rightarrow D_f = \mathbb{R} - \left\{ k\pi + \frac{\pi}{2} \right\}$$

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$$\rightarrow y = \frac{\cos x}{r \cos x - 1} \rightarrow r \cos x - 1 \neq 0 \rightarrow \cos x \neq \frac{1}{r} \rightarrow D_f = \mathbb{R} - \left\{ r k \pi \pm \frac{\pi}{r} \right\}$$

$$\text{اذا } y = \frac{x+r}{|rx+1|-|x+r|} \rightarrow |rx+1| \neq |x+r| \rightarrow rx+1 \neq x+r \rightarrow x \neq r$$

$$\rightarrow rx+1 \neq -x-r \rightarrow x \neq -\frac{r}{r} \rightarrow D_f = \mathbb{R} - \left\{ r, -\frac{r}{r} \right\}$$

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$$\rightarrow y = \sqrt{|rx+1|-|x+r|} \rightarrow |rx+1|-|x+r| \geq 0 \rightarrow |rx+1| \geq |x+r|$$

$$\rightarrow rx+1 \geq x+r \rightarrow x \geq r$$

$$\rightarrow rx+1 \leq -x-r \rightarrow rx \leq -2 \rightarrow x \leq -\frac{2}{r} \quad \left\{ D_f = (-\infty, -\frac{2}{r}] \cup [r, +\infty) \right\}$$

$$f(x) = \sqrt{\log_{\frac{1}{a}} \log_{\frac{1}{a}} (x^{n-1})} \rightarrow \log_{\frac{1}{a}} \log_{\frac{1}{a}} x^{n-1} \geq 0 \xrightarrow{\log_{\frac{1}{a}} x^{n-1} \geq 0} \log_{\frac{1}{a}} x^{n-1} \leq 1 \rightarrow x^{n-1} \leq a \rightarrow x \leq r$$

$$\log_{\frac{1}{a}} x^{n-1} > 0 \rightarrow x^{n-1} > 1 \rightarrow x > 1$$

$$x^{n-1} > 0 \rightarrow x > \frac{1}{r}$$

$$\rightarrow D_f = (1, r]$$

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$$\text{اذا } y = \log(r \cos x + 1) \rightarrow r \cos x + 1 > 0 \rightarrow \cos x > -\frac{1}{r} \rightarrow D_f = \left(rk\pi - \frac{r\pi}{r}, rk\pi + \frac{r\pi}{r} \right)$$

$$\rightarrow y = \sqrt{\log \frac{n-1}{n+1}} \rightarrow \log \frac{n-1}{n+1} \geq 0 \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1-(n+1)}{n+1} \geq 0 \rightarrow \frac{-r}{n+1} \geq 0$$

$$n+1 < 0 \rightarrow n < -1 \rightarrow (-\infty, -1)$$

$$\frac{n-1}{n+1} > 0 \rightarrow \frac{-1}{+1-1} \rightarrow (-\infty, -1) \cup [1, +\infty) \quad \left\{ D_f = (-\infty, -1) \right\}$$

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