

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

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

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$f(x) = \frac{\sqrt{2-x^2}}{[x] \cdot [-x]}$ $\rightarrow 2-x^2 \geq 0 \rightarrow x^2 \leq 2 \rightarrow -2 \leq x \leq 2 \rightarrow -2, -1, 0, 1, 2 \rightarrow \textcircled{a}$
 $\hookrightarrow \text{if } x \in \mathbb{Z} \rightarrow [x] \cdot [-x] = 0 \rightarrow \text{خرج هیچ رشت صفر نمی شود}$

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$\sqrt{x^3+2x^2} \rightarrow x^2 \cdot 3x^2 \geq 0 \rightarrow x^2(x+3) \geq 0 \rightarrow \frac{-3 \pm \sqrt{9}}{-1 \pm 2} \rightarrow D_f = [-3, +\infty)$

$\rightarrow y = \sqrt{\frac{(x^2-1)(x^2-3x^2)}{x^2-1}} = \sqrt{\frac{(x+1)(x-1)(x^2)(x-3)}{(x-1)(x^2+x+1)}}$
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 $\rightarrow D_f = (-\infty, -1) \cup \{0\} \cup [3, +\infty)$

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$y = \sqrt{|x-2|-3} \rightarrow |x-2|-3 \geq 0 \rightarrow |x-2| \geq 3 \rightarrow x-2 \geq 3 \rightarrow x \geq 5$
 $x-2 \leq -3 \rightarrow x \leq -1$
 $D_f = (-\infty, -1] \cup [5, +\infty)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

$$\rightarrow D_f = \left(\frac{1}{r}, r \right]$$

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

$$\text{ح) } y = \sqrt{\log \frac{n-1}{n+1}} \rightarrow \log \frac{n-1}{n+1} \geq 0 \rightarrow \frac{n-1}{n+1} \geq 1 \rightarrow \frac{n-1-(n+1)}{n+1} \geq 0 \rightarrow \frac{-2}{n+1} \geq 0$$

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

$$\frac{n-1}{n+1} > 0 \rightarrow \frac{-1}{+1} > 0 \rightarrow (-\infty, -1) \cup [1, +\infty)$$

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