

$$2) y = \frac{x+2}{2x^2+2x-1x+2} \Rightarrow \frac{x+2}{(x-1)(2x^2+2x-1)} \Rightarrow D_f = \mathbb{R} - \left\{-\frac{1}{2}, \frac{1}{2}, 1\right\}$$

$$1) y = \frac{x+2}{2x^2+2x+10x+2} \Rightarrow \frac{x+2}{(x+1)(2x^2+2x+10)} \Rightarrow D_f = \mathbb{R} - \left\{-\frac{1}{2}, \frac{1}{2}, -1\right\}$$

$$3) \frac{x^2+2}{x^2-2x+2x-1} \Rightarrow \frac{x+2}{(x-1)(x^2-x+1)} \Rightarrow D_f = \mathbb{R} - \{1\}$$

$$1) \sqrt{\frac{x+2}{x^2-2x+2x-1}} \Rightarrow \frac{-2}{+} - \frac{1}{-} \Rightarrow D_f = \mathbb{R} - (-2, 1]$$

$$\frac{2}{x^2-2x+2x-1} \rightarrow \begin{aligned} & x^2-2x+2x-1 = x^2-1 \rightarrow x=1, -1 \\ & x^2-2x+2x-1 = x^2+2x \rightarrow x=0, -2 \end{aligned} \Rightarrow D_f = \mathbb{R} - \{0, 1, -1, -2\}$$

$$1) y = \sqrt{-x-2} \Rightarrow [-x] \geq -2 \Rightarrow x \leq -1 \Rightarrow D_f = (-\infty, -1]$$

$$1) y = \frac{\sqrt{2x+2}}{[x]^2-2[x]-2} \Rightarrow [x]=t \Rightarrow t^2-2t-2=0 \Rightarrow t=3, -1 \Rightarrow [x]=-1 \Rightarrow -1 \leq x < 0 \Rightarrow D_f = \mathbb{R} - [-1, 0] \cup [3, 4]$$

$$1) y = \sqrt{\left[x-\frac{1}{2}\right] + \left[x+\frac{1}{2}\right]} \Rightarrow \sqrt{2\left[x+\frac{1}{2}\right]-1} \Rightarrow 2\left[x+\frac{1}{2}\right] \geq 1 \Rightarrow \left[x+\frac{1}{2}\right] \geq \frac{1}{2} \Rightarrow x+\frac{1}{2} \geq 1 \Rightarrow x \geq \frac{1}{2} \Rightarrow D_f = \left[\frac{1}{2}, +\infty\right)$$

$$1) y = \sqrt{\left[x-\frac{1}{2}\right] + \left[\frac{1}{2}-x\right]} \text{ if } x-\frac{1}{2} = t \Rightarrow \sqrt{[t] + [-t]} \Rightarrow t \in \mathbb{Z} \Rightarrow x = k + \frac{1}{2}, k \in \mathbb{Z} \Rightarrow D_f = \left\{x \mid x = k + \frac{1}{2}, k \in \mathbb{Z}\right\}$$

2) $y = \frac{\cos x + 1}{\cos x - 1} \Rightarrow \Rightarrow D_f = \mathbb{R} - \left\{ \frac{k\pi}{2} \right\} - \left\{ \frac{k\pi}{2} + \pi \right\}$

3) $y = \sqrt{1 - r^2 \sin^2 x} \Rightarrow r^2 \sin^2 x \leq 1 \Rightarrow \sin^2 x \leq \frac{1}{r^2} \Rightarrow \sin x \leq \frac{1}{r} \Rightarrow \Rightarrow D_f = \left[k\pi + \frac{\pi}{2}, k\pi + \frac{3\pi}{2} \right]$

4) $y = \sqrt{r \sin x - 1} \Rightarrow \sin x \geq \frac{1}{r} \Rightarrow \Rightarrow D_f = \left[r k \pi + \frac{\pi}{2}, r k \pi + \frac{3\pi}{2} \right]$

5) $y = \sqrt{1 - r \cos x} \Rightarrow r \cos x \leq 1 \Rightarrow \cos x \leq \frac{1}{r} \Rightarrow \Rightarrow D_f = \left[r k \pi + \frac{\pi}{2}, r k \pi + \frac{3\pi}{2} \right]$

6) $y = \arcsin(x^2 + r + 1) \Rightarrow x^2 + r + 1 \leq 1 \Rightarrow x^2 + r \leq 0 \Rightarrow x^2 \leq -r \Rightarrow D_f = [-r, 0]$

7) $\cos y = \sqrt{a - rx} \Rightarrow I \rightarrow x \leq r/a \Rightarrow II \rightarrow -1 \leq \sqrt{a - rx} \leq 1 \Rightarrow \sqrt{a - rx} \leq 1 \Rightarrow a - rx \leq 1 \Rightarrow x \geq r$

8) $y = \log_r(1 - \log_r x) \Rightarrow I \rightarrow x > 0 \Rightarrow II \rightarrow -\log_r x \leq 1 \Rightarrow \log_r x \geq -1 \Rightarrow x \geq r^{-1}$

$\Rightarrow x \leq r \Rightarrow D_f = (r^{-1}, r)$

9) $y = \log_r(1 - \log_r \frac{x}{r}) \Rightarrow I \rightarrow x > 0 \Rightarrow II \rightarrow \log_r \frac{x}{r} < 1 \Rightarrow \frac{x}{r} < r \Rightarrow x < r^2 \Rightarrow D_f = (0, r^2)$

10) $y = \sqrt{\frac{x^2 + r}{r}} - 1 \Rightarrow \frac{x^2 + r}{r} \geq 1 \Rightarrow x^2 + r \geq r \Rightarrow x^2 \geq 0 \Rightarrow x \geq 0 \Rightarrow D_f = [0, r]$

11) $y = \left(\frac{rx + a}{rx + r} \right) \Rightarrow \frac{rx + a}{rx + r} \in \mathbb{Z} \Rightarrow x = \frac{r(z - a)}{r - r} \Rightarrow D_f = \left\{ x \mid x = \frac{a - rk}{r - r}, k \in \mathbb{Z} \right\}$