

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

$$D_f = \left[r k \pi + \frac{\pi}{2}, r k \pi + \frac{3\pi}{2} \right] \quad k \in \mathbb{Z}$$


$$y = \sqrt{\cos x - 1} \quad \cos x - 1 \geq 0 \quad \cos x \geq 1$$

$$D_f = \{ r k \pi \mid k \in \mathbb{Z} \}$$


$$\cos y = |x| - r \quad r \leq |x| \leq r$$

$$-1 \leq |x| - r \leq +1$$

$$D_f = [-r, -r] \cup [r, r]$$

$$y = \arcsin(r x + r x + 1)$$

$$-1 \leq r x + r x + 1 \leq +1$$

$$r x + r x + 1 \leq +1 \quad r x + r x \leq 0 \quad x(x+r) \leq 0$$

$$x \in [-r, 0]$$

$$r - \log(r - r) \geq 0 \quad \log(r) \leq r \quad r - r \leq 9 \quad r \leq 11$$

$$r < x \leq 11 \quad D_f = (r, 11]$$

$$b) \log(r^x - x)$$

$$r^x - x > 0 \quad x(r^x - 1) > 0$$

$$x > 0 \quad r^x > 1 \quad x > 0$$

$$(-1, 0) \cup (1, +\infty)$$

$$a) D_f = \mathbb{R} \quad r^x + 1 > 0$$

$$b) D_f = \mathbb{R} - \{0\} \quad r^x - 1 \neq 0 \quad r^x \neq 1 \quad x \neq 0$$

$$c) D_f = \mathbb{R} - \log(r)$$

$$r^x - r \neq 0 \quad r^x \neq r$$

$$d) r^x - r \neq 0 \quad D_f = \mathbb{R} - \log(r)$$

$$r x + 1 \in W \quad x \in \frac{W-1}{r} \quad \{x \mid x = \frac{k-1}{r}, k \in W\}$$

$$\frac{r x - r}{r x - r} \in W \quad r x - r \in W x - r W$$

$$\{x \mid x \in \frac{-r W + r}{r - r W}, k \in W\}$$