

$$1) x^2 - 1 \neq 0 \Rightarrow x \neq \pm 1 \Rightarrow D_f = \mathbb{R} - \{-1, 1\}$$

$$2) x^2 - 1 \neq 0 \Rightarrow D_f = \mathbb{R}$$

$$3) x^2 + 1 \neq 0 \Rightarrow D_f = \mathbb{R}$$

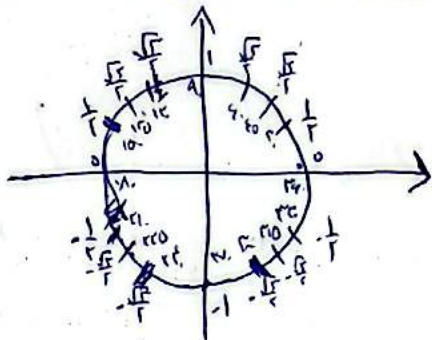
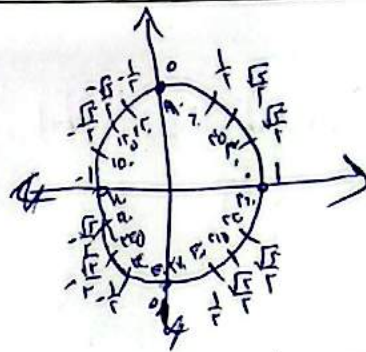
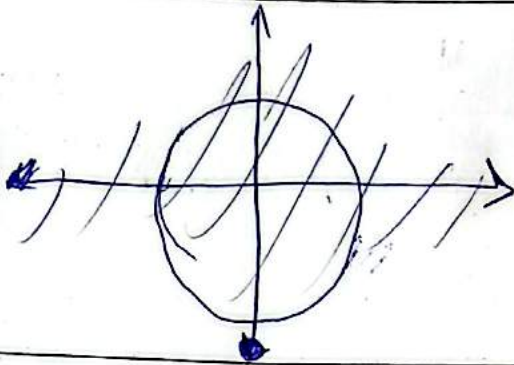
$$4) x^2 - 1 \neq 0 \Rightarrow x^2(x-1)(x+1) \neq 0 \Rightarrow x \neq \pm 1 \Rightarrow D_f = \mathbb{R} - \{-1, 1\}$$

$$5) x > 0 \Rightarrow x > 0, x < 0 \Rightarrow x < 0 \Rightarrow D_f = [1, 2]$$

$$6) x^2 + 1 \neq 0 \Rightarrow D_f = \mathbb{R}$$

$$7) x > 1, x - 1 \neq 0 \Rightarrow D_f = [1, +\infty) - \{1\}$$

$$8) x^2 + |x| \neq 0 \Rightarrow x \neq 0 \Rightarrow D_f = \frac{1}{2}\mathbb{R} - \{0\}$$



$$9) -\cos \frac{7\pi}{4} = -(-\frac{1}{2}) = \frac{1}{2} \quad \sin \frac{\pi}{4} = \sin \frac{2\pi}{4} = \frac{1}{2}$$

$$10) -\cos \frac{11\pi}{4} = -\frac{\sqrt{2}}{2} \quad \sin \frac{5\pi}{4} = \sin \frac{6\pi}{4} = -\frac{\sqrt{2}}{2}$$