

$$①. f: y = \frac{x+1}{x-3} \quad x \neq 3$$

$$D_f = \mathbb{R} - \{3\}$$

$$②. f: y = \sqrt{-3+4x}$$

$$-3+4x \geq 0$$

$$4x \geq 3$$

$$x \geq \frac{3}{4} \quad D_f = \left[\frac{3}{4}, \infty \right)$$

$$③. f: y = \frac{x^2+1}{x^2+x+1} \leftarrow \text{VĚDY } \oplus$$

$$x^2+x+1 \neq 0$$

$$D = 1 - 4 \cdot 1 \cdot 1 < 0$$

$$\text{VĚDY } \oplus$$

$$D_f = \mathbb{R}$$

$$④. f: y = \frac{x}{13x^2+10x-3}$$

$$13x^2+10x-3 \neq 0$$

$$D = 100 - 4 \cdot 13 \cdot (-3) = 256$$

$$\sqrt{D} = 16$$

$$x_{1,2} = \frac{-10 \pm 16}{26} = \left\langle \frac{3}{13}, -1 \right\rangle \quad D_f = \mathbb{R} - \left\{ -1, \frac{3}{13} \right\}$$

$$⑤. f: y = \sqrt{x^2-x-6}$$

$$x^2-x-6 \geq 0$$

$$(x-3)(x+2) \geq 0$$



$$D_f = (-\infty, -2) \cup (3, \infty)$$

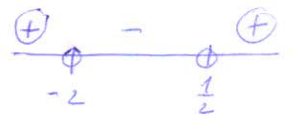
$$⑥. f: y = \frac{1}{\sqrt{2x^2+3x-2}}$$

$$2x^2+3x-2 > 0$$

$$D = 9 - 4 \cdot 2 \cdot (-2) = 25$$

$$\sqrt{D} = 5$$

$$x_{1,2} = \frac{-3 \pm 5}{4} = \left\langle -2, \frac{1}{2} \right\rangle$$



$$D_f = (-\infty, -2) \cup \left(\frac{1}{2}, \infty \right)$$

$$⑦. f: y = \sqrt{\frac{x+2}{x-5}}$$

$$\frac{x+2}{x-5} \geq 0$$



$$D_f = (-\infty, -2) \cup (5, \infty)$$

$$⑧. f: y = \frac{\sqrt{x-4}}{2x-9}$$

$$x-4 \geq 0 \quad \wedge \quad x \neq \frac{9}{2}$$

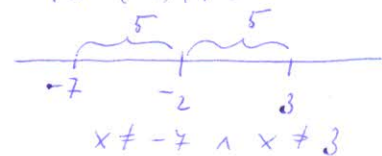
$$x \geq 4$$

$$D_f = [4, \infty) - \left\{ \frac{9}{2} \right\}$$

$$⑨. f: y = \frac{10}{|x+2|-5}$$

$$|x+2|-5 \neq 0$$

$$|x-(-2)| \neq 5$$



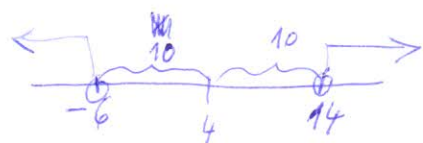
$$x \neq -7 \quad \wedge \quad x \neq 3$$

$$D_f = \mathbb{R} - \{-7, 3\}$$

$$⑩. f: y = \frac{x^2-9}{\sqrt{|x-4|-10}}$$

$$|x-4|-10 > 0$$

$$|x-4| > 10$$



$$D_f = (-\infty, -6) \cup (14, \infty)$$