

۱۰۰ / دهم اربعه / عصری

$$x^3 - x \neq 0 \rightarrow x^3 \neq x \rightarrow x \neq 1_0$$

(iii) $y = \sqrt{\frac{x^2 - 4x}{x^3 - x}} \Rightarrow \frac{x^2 - 4x}{x^3 - x} \geq 0$
 $\frac{x^2 - 4x}{x^3 - x} \geq 0 \Rightarrow x^2 - 4x = 0 \Rightarrow x^2 = 4x \Rightarrow x = 4$
 $\frac{x^2 - 4x}{x^3 - x} \geq 0 \Rightarrow 1, 0$
 $\frac{0}{0} + \frac{1}{0} - \frac{4}{0} +$

$$D_f = (0, 1) \cup [4, +\infty)$$

$\hookrightarrow y = \sqrt{\frac{x^2 - x^2}{x^2 - x^2}} \rightarrow x^2 - x^2 = 0 \rightarrow x^2 = x^2 \rightarrow x = 0, 1, -1$
 $\hookrightarrow 1, 0 \quad -\frac{1}{0} + \frac{0}{0} + \frac{1}{0} +$

$$D_f = [-1, 0) \cup (0, 1) \cup (1, +\infty)$$

Cell) $y = \frac{x+1}{\sqrt{x+|x|}} \rightarrow \mathbb{R}$
 $\sqrt{x+|x|} \rightarrow x+|x| \geq 0 \rightarrow \mathbb{R}^+$ $D_f = (0, +\infty)$

$$c) y = \frac{1}{\sqrt{2x|xz|}} \rightarrow x|z| > 0 \rightarrow \mathbb{R}^+ \quad D_f = (0, +\infty)$$

c) $y = \sqrt{r-x} \rightarrow r-x \geq 0 \rightarrow r \geq x$ $\xrightarrow{\text{Grenzwert}}$ $r \geq 0$ $D_f = (-\infty, r)$

ج) $y = \frac{1}{\sqrt{2-x}} \rightarrow 2-x > 0 \rightarrow x < 2$ $D_f = (-\infty, 2)$

$$\text{ciii) } y = \sqrt{\left[x - \frac{1}{x}\right] + \left[x + \frac{y}{x}\right]} \Rightarrow \overset{(1)}{\left[x - \frac{1}{x}\right] + \left[x + \frac{y}{x}\right]} \geq 0 \rightarrow \overset{(2)}{\left[x + \frac{y}{x}\right] - 1 + \left[x + \frac{y}{x}\right]} \geq 0$$

③ $\gamma\left[x+\frac{\gamma}{\gamma}\right] \geq 1 \rightarrow \left[x+\frac{\gamma}{\gamma}\right] \geq \frac{1}{\gamma} \rightarrow x+\frac{\gamma}{\gamma} \geq 1 \rightarrow x \geq \frac{1}{\gamma} \quad D_2 = \left[\frac{1}{\gamma}, \infty\right)$

$\hookrightarrow \sqrt{\left[x - \frac{1}{p}\right] + \left[-x + \frac{1}{p}\right]} \Rightarrow \left[x - \frac{1}{p}\right] + \left[-\left(x - \frac{1}{p}\right)\right] \geq 0 \quad \begin{matrix} \nearrow a \in \mathbb{Z} \rightarrow 0 \\ \searrow a \notin \mathbb{Z} \rightarrow -1 \end{matrix} \rightarrow x - \frac{1}{p} \in \mathbb{Z}$
 $D_1 = \{x \mid x = k + \frac{1}{p}, k \in \mathbb{Z}\}$

الف) $y = \frac{r}{\sin \alpha - 1} \neq 0 \rightarrow \sin \alpha \neq 1$ $D_f = \mathbb{R} - \left\{ r k\pi + \frac{\pi}{r} \right\}$ 

c) $y = \frac{w}{y \sin^2 x - 1} \neq 0 \rightarrow y \sin^2 x \neq 1$
 $DA = IR - \left\{ \frac{\pi}{2}, y \sqrt{1 + \frac{w}{y}} \right\}$

Call $y = \sqrt{r \sin \alpha} - 1$
 $r \sin \alpha \geq 0$
 $r \sin 2\alpha \geq 1$
 $\sin \alpha \geq \frac{1}{r}$

 A unit circle diagram with a horizontal line at y = 1/2. The region where the circle is above this line is shaded, representing the range of alpha where sin alpha >= 1/2.

$D_f = \left[\frac{\pi}{6}, r\pi + \frac{5\pi}{6} \right]$

$y = \sqrt{\cos x - 1}$
 $\cos x - 1 \geq 0$
 $\cos x \geq 1$
 $D_f = \{x \mid x = 2k\pi\}$

حل 1) $\cos y = |x| - 3 \rightarrow -1 \leq |x| - 3 \leq 1$
 $2 \leq |x| \leq 4 \rightarrow x \leq -2 \leq x \leq 4$
 $D_f = [-2, -1] \cup [1, 4]$

حل 1) $y = \arcsin(x^2 + 3x + 1) \rightarrow -1 \leq x^2 + 3x + 1 \leq 1$ ✓
 ① $x^2 + 3x + 1 \geq 0$
 $-(x+1)(x+2) \geq 0 \rightarrow x \leq -2$

② $x^2 + 3x \leq 0$
 $x(x+3) \leq 0 \rightarrow x \geq 0$
 $x \leq -3$

$D_f = [-3, -2] \cup [0, 1]$

حل 1) $\sqrt{y - \log_p(x-2)}$ $x-2 > 0 \rightarrow x > 2$
 $y - \log_p(x-2) \geq 0 \rightarrow \log_p(x-2) \leq y$
 $x-2 \leq 9$
 $x \leq 11$
 $D_f = (2, 11]$

حل 1) $\log(x^2 - x)$ $x^2 - x > 0$
 $x(x-1) > 0 \rightarrow x < 0$ or $x > 1$
 $D_f = (-1, 0) \cup (1, +\infty)$

حل 1) $y = \frac{1}{x^2 + 1} \rightarrow D_f = \mathbb{R}$

حل 1) $y = \frac{1}{x^2 - 1} \rightarrow D_f = \mathbb{R} - \{0\}$

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حل 1) $y = (x+1)!$
 $x+1 \in \mathbb{N}$
 $x \in \mathbb{N} - 1$
 $D_f = \{x \mid x = \frac{k-1}{f}, k \in \mathbb{N}\}$

حل 1) $y = \left(\frac{x-2}{x^2-1}\right)!$
 $\frac{x-2}{x^2-1} \in \mathbb{N}$
 $D_f = \{x \mid x = \frac{-aw+r}{rw-r}, k \in \mathbb{N}\}$