

$$f(x) = \sqrt{(a-x)x^2+bx+c} \rightarrow D_f = [r_1, +\infty) \rightarrow (a-x)x^2+bx+c \geq 0$$

$$a-x, \dots$$

$$a, \textcircled{P}$$

$$x \geq b \Rightarrow x \geq -\frac{b}{r}$$

$$-\frac{b}{r}, r$$

$$\Rightarrow b, -r$$

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$$x^2 \leq x + (1-m^2) \geq 0 \quad \text{محل: } -\frac{1}{2}, -1 \quad f_{\min} = 1-m^2$$

$$\Delta = 1 - 4(1)(1-m^2) \leq 0$$

$$1-m^2 \geq 0 \rightarrow m^2 \leq 1 \rightarrow -1 \leq m \leq 1$$

$$-1 \leq m \leq 1 \rightarrow \text{max}, 1$$

$$\text{min}, -1$$

$$1 - (-1), \textcircled{P}$$

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$$\varepsilon - x^2 \geq 0 \rightarrow -\sqrt{\varepsilon} \leq x \leq \sqrt{\varepsilon}$$

$$[x] + [-x]$$

$$x \notin \mathbb{Z} \rightarrow \text{زوج}$$

$$x \in \mathbb{Z} \rightarrow \text{زوج}, 1$$

$$x \in \mathbb{Z}, \rightarrow$$

$$[-2, 2]$$

$$\{-2, -1, 0, 1, 2\}$$

$$\text{مجموعه}$$

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$$\sqrt{x^2+cx} \rightarrow \sqrt{x^2(x+c)}$$

$$D = [-3, +\infty)$$

$$\sqrt{\frac{x^2(x+c)(x-c)}{x^2+x+1}}$$

$$x \neq 1$$

$$(x+1)(x-c) \geq 0$$

$$x \leq -1 \quad x \geq c$$

$$x, 0 \checkmark$$

$$D = (-\infty, -1] \cup [0, c] \cup [c, +\infty)$$

$$\sqrt{\frac{(x^2-1)(x^2-cx)}{x^2-1}} \rightarrow \sqrt{\frac{(x-1)(x+1)x^2(x-c)}{(x-1)(x^2+x+1)}}$$

$$\text{مجموعه}$$

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$$\sqrt{|x-2|-3}$$

$$x-2 \geq 3 \rightarrow x \geq 5$$

$$x-2 \leq -3 \rightarrow x \leq -1$$

$$D = (-\infty, -1] \cup [5, +\infty)$$

$$-5 \leq -x \leq 5 \rightarrow -5 \leq x \leq 5$$

$$-2 \leq x \leq 4$$

$$\sqrt{\varepsilon - |2-x|} \rightarrow \varepsilon - |2-x| \geq 0$$

$$|2-x| \leq \varepsilon \rightarrow -\varepsilon \leq 2-x \leq \varepsilon$$

$$D = [2, 4]$$

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الف) $\sqrt{1-x x }$ if $x > 0 \rightarrow x^2 \leq 1 \rightarrow 0 < x \leq 1$ if $x < 0 \rightarrow -x^2 \leq 1 \rightarrow x^2 \geq -1 \rightarrow$ always true	$D: [r, r) \cup (r, v) \cup (v, \wedge]$ $D: (-\infty, 1]$ $x-d \neq r \rightarrow x \neq v$ $x-d \neq -r \rightarrow x \neq \wedge$ $\sqrt{r- x-d } - 1 \neq 0$ $(\sqrt{r- x-d })^2 + 1$ $r- x-d \neq 1 \rightarrow x-d \neq r$
الف) $y = \frac{\sin^2 x - 1}{\cos x}$ $\cos x \neq 0$ $x \neq k\pi \pm \frac{\pi}{2} \quad (k \in \mathbb{Z})$ $D: \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$	$\cos x \neq 0$ $x \neq k\pi \pm \frac{\pi}{2} \quad (k \in \mathbb{Z})$ $D: \mathbb{R} - \{k\pi \pm \frac{\pi}{2}\}$
الف) $\frac{x+1}{ x+1 - x+c }$ $x+1 - x+c \neq 0$ $x+1 \neq x+c$ $x+1 = x+c \rightarrow x = -1$ $x+1 = -(x+c) \rightarrow x = -\frac{c}{2}$ $D: \mathbb{R} - \{-\frac{c}{2}, -1\}$	$x+1 - x+c \neq 0$ $x+1 \neq x+c$ $x+1 = x+c \rightarrow x = -1$ $x+1 = -(x+c) \rightarrow x = -\frac{c}{2}$ $D: (-\infty, -\frac{c}{2}] \cup [-1, +\infty)$
الف) $\sqrt{ x+1 - x+c }$ $x+1 - x+c \geq 0$ $x+1 \geq x+c$ $(x+1)^2 \geq (x+c)^2$ $(x+1)^2 \geq (x+c)^2$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$	$x+1 - x+c \geq 0$ $x+1 \geq x+c$ $(x+1)^2 \geq (x+c)^2$ $(x+1)^2 \geq (x+c)^2$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$ $(x+1)^2 - (x+c)^2 \geq 0$
الف) $y = \log_2(x-1)$ $\log_2(x-1) > 0 \rightarrow x-1 > 1 \rightarrow x > 2 \rightarrow x > 1$ $\log_2(x-1) \leq (0, 0)$ $\log_2(x-1) \leq 1$ $x-1 \leq 2 \rightarrow x \leq 3$ $D: (1, 3]$	$\log_2(x-1) > 0 \rightarrow x-1 > 1 \rightarrow x > 2 \rightarrow x > 1$ $\log_2(x-1) \leq (0, 0)$ $\log_2(x-1) \leq 1$ $x-1 \leq 2 \rightarrow x \leq 3$ $D: (1, 3]$