

$$f(x) = \sqrt{(a-2)x' + ax + b} \quad [3, +\infty) \quad (1)$$

$$(a-2)x' + ax + b \geq 0 \quad a=2$$

$$2x + b \geq 0$$

$$b \geq -6$$

$$f(x) = \sqrt{x^2 + 2x + 2 - m^2} \quad (2)$$

$$x^2 + 2x + 1 + 1 - m^2 \geq 0 \rightarrow (x+1)^2 + (1-m^2) \geq 0$$

$$1-m^2 \geq 0 \rightarrow \frac{1}{-1} + \frac{1}{-1}$$

$$(1-m)(1+m) \geq 0$$

$$1, -1 \rightarrow \text{✓} \quad (2)$$

$$f(x) = \sqrt{(2-x)(2+x)} \geq 0 \quad (3)$$

$$[x] + [-x] + 1$$

$$[x] + [-x] \neq -1$$

مخرج هر کس منفی است
مخرج هر کس مثبت است

$$-2 \quad 2$$

$$- \quad + \quad -$$

$$-2 \quad -1 \quad 0 \quad 1 \quad 2$$

✓

✓

$$g = \sqrt{x^3 + 1^3 x^1} \geq 0 \rightarrow x^1(x+1^3) \geq 0 \quad (1)$$

$$\begin{array}{c} \bullet 1^3 \quad \bullet^* \\ - \quad + \quad + \end{array} \quad \begin{array}{c} x=0 \quad x=-1^3 \\ [-1^3, +\infty) \end{array}$$

$$g = \sqrt{\frac{(x-1)(x+1)(x^3)(x-1^3)}{(x-1)(x^2+1+x)}} \geq 0$$

$$\begin{array}{c} -1 \quad 1^3 \quad \bullet^* \quad \mu \\ + \quad - \quad - \quad - \quad + \end{array}$$

+ 0/6

$$(-\infty, -1] \cup [1^3, +\infty) \cup \{0\}$$

$$g = \sqrt{|x-2|-1^3} \quad |x-2| \geq 1^3 \quad (a)$$

$$x-2 \geq 1^3 \rightarrow x \geq 3$$

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

$$[3, +\infty) \cup (-\infty, -1]$$

$$g = \sqrt{1^3 - |1^3 - x|} \quad 1^3 - |1^3 - x| \geq 0$$

$$|1^3 - x| \leq 1^3$$

$$-1^3 \leq 1^3 - x \leq 1^3$$

$$[-1, 1] \quad \leftarrow \quad +1^3 \geq x \geq -1^3$$

$$y = \sqrt{1 - x|x|} \geq 0 \rightarrow x|x| \leq 1$$

$x \leq 1$

(٤)

$$y = \frac{1}{\sqrt{1 - |x-d| - 1}}$$

$-x \leq x-d \leq x$

$y \leq x \leq 1$

$$\sqrt{1 - |x-d|} \neq 1 \rightarrow 1 - |x-d| \neq 1$$

$$[1, 1] - \{x, y\}$$

$|x-d| \neq 1$

$x \neq y, y$

$$y = \frac{\sin x - 1}{\cos x \neq 0}$$

$1 - \{x, y + \frac{y}{x}\}$

(٧)

$$y = \frac{\cos x}{\cos x - 1}$$

(٨)

$$1 - \{y, y + \frac{y}{x}\}$$

$\cos x \neq \frac{1}{x}$



$$y = \frac{x+3}{|2x+1| - |x+3|}$$

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$$|2x+1| = |x+3| \xrightarrow{\text{توان ۲}} 4x^2+1+4x = x^2+9+4x$$

$$x \neq -4, +9$$

$$3x^2 - 2x - 1 = 0$$

$$x^2 - 2x - 2 = 0$$

$$(x+2)(x-4) = 0$$

$$x = -2, 4$$

$$1/2 - \left\{ -\frac{4}{3}, 2 \right\}$$

$$y = \sqrt{|2x+1| - |x+3|} \geq 0$$

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$$|2x+1| \geq |x+3| \rightarrow 3x^2 - 2x - 1 \geq 0$$

$$(-\infty, -2] \cup [4, +\infty)$$

$$f(x) = \sqrt{\log \log_{\omega} (2x-1)} \geq 0$$

$$\log_{\omega} (2x-1) > 0 \quad 2x-1 > 1 \quad (x > 1)$$

$$0 < \log_{\omega} (2x-1) \leq 1$$

$$D_f = (1, 3]$$

$$2x-1 \leq \omega \rightarrow (x \leq 3)$$

$$y = \log(\sqrt{2}\cos\alpha + 1)$$

(10)

$$\sqrt{2}\cos\alpha + 1 > 0 \quad \cos\alpha > -\frac{1}{\sqrt{2}}$$

$$\left(\sqrt{2}\cos\alpha - \frac{1}{\sqrt{2}}, \sqrt{2}\cos\alpha + \frac{1}{\sqrt{2}}\right)$$



$$g = \sqrt{\log \frac{x-1}{x+1}} \geq 0$$

$$\frac{x-1}{x+1} > 0$$

$$\frac{x-1}{x+1} \geq 1$$

$$\frac{-1}{+} - \frac{1}{-} +$$

$$\frac{x-1-x-1}{x+1} \geq 0 \quad (-\infty, -1) \cup [1, +\infty)$$

$$\frac{-2}{x+1} \geq 0$$

$$x+1 < 0$$

$$(-\infty, -1)$$

$$x < -1$$