

$\sqrt{\varepsilon - 2m^2} \rightarrow \varepsilon - 2m^2 \geq 0 \rightarrow 2m^2 \leq \varepsilon \rightarrow m^2 \leq \frac{\varepsilon}{2} \rightarrow -\sqrt{\frac{\varepsilon}{2}} \leq m \leq \sqrt{\frac{\varepsilon}{2}}$ $[-\sqrt{\frac{\varepsilon}{2}}, \sqrt{\frac{\varepsilon}{2}}]$	6
$y = \sqrt{3 m - 9} \rightarrow 3 m - 9 \geq 0 \rightarrow 3 m \geq 9 \rightarrow m \geq 3 \rightarrow \begin{matrix} m \leq -3 \\ m \geq 3 \end{matrix}$ $(-\infty, -3] \cup [3, +\infty)$	7
$y = \frac{\sqrt{ x +1}}{ x -3}$ $ x -3 \neq 0 \rightarrow x \neq 3 \rightarrow x \neq \pm 3$ $\mathbb{R} - \{-3, 3\}$	8
$y = \frac{\sin x}{\sqrt{3} \cos x - 1}$ $\sqrt{3} \cos x - 1 \neq 0 \rightarrow \sqrt{3} \cos x \neq 1 \rightarrow \cos x \neq \frac{1}{\sqrt{3}} \quad \mathbb{R} - \{2k\pi \pm \frac{\pi}{6}\}$ $y = \frac{\cos x + 1}{\sqrt{3} \sin x + 1}$ $\sqrt{3} \sin x + 1 \neq 0 \rightarrow \sqrt{3} \sin x \neq -1 \rightarrow \sin x \neq -\frac{1}{\sqrt{3}} \quad \mathbb{R} - \{2k\pi - \frac{\pi}{6}, 2k\pi + \frac{7\pi}{6}\}$ $y = \frac{\tan x + 1}{\cot x - 1}$  $\cot x - 1 \neq 0 \rightarrow \cot x \neq 1 \rightarrow \tan x \neq 1 \quad \mathbb{R} - \{k\pi, k\pi + \frac{\pi}{4}, k\pi + \frac{5\pi}{4}\}$ $y = \frac{\sin x + 1}{\sqrt{3} \sin x - 3}$ $\sqrt{3} \sin x - 3 \neq 0 \rightarrow \sqrt{3} \sin x \neq 3 \rightarrow \sin x \neq \frac{\sqrt{3}}{2} \rightarrow \sin x \neq \pm \frac{\sqrt{3}}{2} \quad \mathbb{R} - \{k\pi + \frac{\pi}{3}, k\pi + \frac{2\pi}{3}\}$	9
$y = \frac{1}{\sqrt{2 m-2 - \frac{1}{2}}}$ $2 m-2 - \frac{1}{2} > 0$ $2 m-2 > \frac{1}{2}$ $ m-2 > \frac{1}{4} \Rightarrow \begin{matrix} m-2 > \frac{1}{4} \rightarrow m > \frac{9}{4} \\ m-2 < -\frac{1}{4} \rightarrow m < \frac{7}{4} \end{matrix}$ $(-\infty, \frac{7}{4}) \cup (\frac{9}{4}, +\infty)$	10

$$y = \frac{1}{\sqrt{2|m-2| - \frac{1}{2}}}$$

$f(n) + 2$		$f(n-1)$		1
$2f(n)$		$-f(n)$		
$x^2 - 5x + 4 > 0 \rightarrow (x-3)(x-2) > 0$ $x^2 - 4x + 5 < 0 \rightarrow (x-5)(x-1) < 0$ $x^2 + 4x + 5 \geq 0 \rightarrow (x+5)(x+1) \geq 0$ $x^2 - 5x + 4 \leq 0 \rightarrow (x-4)(x-1) \leq 0$	 	$(-\infty, 2) \cup (3, +\infty)$ $(1, 5)$ $(-\infty, -5] \cup [-1, +\infty)$ $[1, 4]$	2	
$\frac{x^2 - 3x + 2}{x - 5} < 0 \rightarrow \frac{(x-2)(x-1)}{x-5}$		$(-\infty, 1) \cup (2, 5)$	3	
$\frac{x^2 - 1}{x^2 - 4x + 5} \geq 0 \rightarrow \frac{(x-1)(x+1)}{(x-5)(x-1)}$		$(-\infty, -1] \cup (5, +\infty)$	4	
$y = \sqrt{\frac{x^2 - 1}{x^2 - x}} \rightarrow \frac{x^2 - 1}{x^2 - x} \geq 0 \rightarrow \frac{x^2 - 1}{x(x^2 - 1)} \geq 0$		$(-\infty, -1) \cup (0, 1) \cup (1, +\infty)$	5	
$y = \sqrt{\frac{x^2 - 12}{x^2 - 5x + 6}} \rightarrow \frac{x^2 - 12}{x^2 - 5x + 6} \geq 0 \rightarrow \frac{(x-4)(x+3)}{(x-3)(x-2)} \geq 0$		$(-\infty, -3] \cup (4, +\infty) - \{2, 3\}$		
$y = \sqrt{2 - \sqrt{2 - x}}$ $\downarrow$ $[-14, 2]$	$2 - x \geq 0 \rightarrow x \leq 2$ $2 - \sqrt{2 - x} \geq 0 \rightarrow \sqrt{2 - x} \leq 2 \rightarrow 2 - x \leq 4 \rightarrow x \geq -14$ $x - 2 \geq 0 \rightarrow x \geq 2$	$[2, 11]$	5	
$\sqrt{2 - \sqrt{2 - x}}$ $3 - \sqrt{2 - x} \geq 0 \rightarrow \sqrt{2 - x} \leq 3 \rightarrow 2 - x \leq 9 \rightarrow x \leq 11$	$x - 2 \leq 9 \rightarrow x \leq 11$			