

۲. افزایش ضریب ضریب مزدی ۱۵٪

$a=2$
 $y = \sqrt{(a-2)x^2 + ax + b} \rightarrow \sqrt{2x+b}$
 $2x+b \geq 0$
 $2x \geq -b$
 $x \geq \frac{-b}{2}$
 $\frac{-b}{2} = 3$
 $b = -6$

$y = \sqrt{x^2 + 2x + 2 - m^2}$
 $\Delta \leq 0 \rightarrow \epsilon - 1 + \epsilon m^2 \leq 0$
 $\epsilon m^2 - \epsilon \leq 0$
 $\epsilon(m+1)(m-1) \leq 0$
 $\frac{-1}{+1-1+}$
 $m \in (-1, 1)$
 $1 - (-1) = 2$
 $m = 1$
 $m = -1$

$f(x) = \sqrt{4-x^2}$
 $\frac{[x]+[-x]+1}{[x]+[-x]+1}$
 $\epsilon - x^2 \geq 0$
 $x^2 \leq \epsilon \rightarrow -\sqrt{\epsilon} \leq x \leq \sqrt{\epsilon} \rightarrow I \in \{-2, -1, 0, 1, 2\}$
 $I \cap II$
 $x \in \mathbb{Z} [x]+[-x]+1 = 1$
 $x \notin \mathbb{Z} [x]+[-x]+1 = 0$
 $\epsilon \rightarrow I$

$y = \sqrt{x^3 + 3x}$
 $x^3 + 3x^2 \geq 0$
 $x^2(x+3) \geq 0$
 $[-3, +\infty)$
 $y = \sqrt{\frac{(x^2-1)(x^3-3x^2)}{x^3-1}}$
 $\frac{(x^2-1)(x^3-3x^2)}{x^3-1} \geq 0$
 $(-\infty, -1] \cup \{0\} \cup [3, +\infty)$
 $\frac{(x+1)(x-1)(x^2)(x-3)}{(x-1)(x^2+1+x)} \geq 0$
 $\frac{-3}{-0+0+}$
 $\frac{-1}{+0-0-}$
 $\frac{3}{-0-0+}$

$y = \sqrt{|x-2|-3}$
 $|x-2|-3 \geq 0$
 $|x-2| \geq 3$
 $-3 \leq x-2 \leq 3$
 $-1 \leq x \leq 5$
 $(-\infty, -1] \cup [5, +\infty)$
 $y = \sqrt{4-|x-2|}$
 $\epsilon - |x-2| \geq 0$
 $|x-2| \leq \epsilon$
 $-2 \leq x \leq 4$
 $-4 \leq 2-x \leq 4$
 $-2 \leq x \leq 4$
 $[-2, 4]$

$الف) y = \sqrt{1-x^2}$ $1-x^2 \geq 0 \quad x \geq 0 \quad 1-x^2 \geq 0$ $\rightarrow [0, 1] \quad (1-x)(1+x)$ $x \leq 0 \quad 1+x^2 \geq 0 \quad (-\infty, 0]$ $\frac{-1}{-1+1} = -$ $[0, 1]$	6
$ب) y = \frac{1}{\sqrt{3- x-1 }-1}$ $\sqrt{3- x-1 } \neq 1$ $3- x-1 \neq 1$ $- x-1 \neq -2$ $ x-1 \neq 2 \quad x \neq 3 \quad x \neq -1$ $x-1 \neq 2 \quad x \neq 3$ $x-1 \neq -2 \quad x \neq -1$ $3- x-1 \geq 0 \quad x-1 \leq 3$ $-3 \leq x-1 \leq 3$ $-2 \leq x \leq 4$ $[2, 4] - \{3, -1\}$	7
$الف) y = \frac{\sin^2 x - 1}{\cos x}$ $\cos x \neq 0 \quad \left\{ R - \left\{ k\pi + \frac{\pi}{2} \right\} \right\}$	8
$ب) y = \frac{\cos}{x \cos - 1}$ $x \cos \neq 1$ $\cos \neq \frac{1}{x}$ $R - \left\{ xk\pi + \frac{\pi}{x}, xk\pi - \frac{\pi}{x} \right\}$	9
$الف) y = \frac{x+3}{ 2x+1 - x+3 }$ $ 2x+1 \neq x+3 $ $x^2 + 4x + 1 \neq x^2 + 6x + 9$ $-2x - 8 \neq 0$ $x \neq -4$ $y = \sqrt{ 2x+1 - x+3 }$ $ 2x+1 - x+3 \geq 0$ $ 2x+1 \geq x+3 $ $x^2 + 4x + 1 \geq x^2 + 6x + 9$ $-2x - 8 \geq 0$ $x \leq -4$ $(-\infty, -4]$	10
$f(x) = \sqrt{\log_{\frac{1}{2}} \log_{\frac{1}{2}} (x-1)}$ $\log_{\frac{1}{2}} \log_{\frac{1}{2}} (x-1) \geq 0$ $\log_{\frac{1}{2}} (x-1) \leq 1$ $x-1 \leq 2$ $x \leq 3$ $x-1 > 0$ $x > 1$ $x > \frac{1}{2}$ $(1, 3]$	11
$الف) y = \log(x \cos + 1)$ $x \cos + 1 > 0$ $x \cos > -1$ $\cos > -\frac{1}{x}$ $(-\infty, -1)$	12
$ب) y = \sqrt{\log \frac{x-1}{x+1}}$ $\frac{x-1}{x+1} > 0$ $\frac{-1}{+1-1+} = -$ $\log \frac{x-1}{x+1} \geq 0$ $\frac{x-1}{x+1} \geq 1$ $\frac{x-1}{x+1} - 1 \geq 0$ $\frac{x-1-x-1}{x+1} \geq 0$ $\frac{-2}{x+1} \geq 0$ $x+1 < 0$ $x < -1$ $(-\infty, -1)$	13