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$$y = \sqrt{\frac{px+r}{x+b}} + a = \sqrt{\frac{(p+a)x+r+ab}{x+b}} \xrightarrow{\text{در صورتی که } p+a > 0} \text{ و ضریب } x \text{ مثبت است}$$

$$\begin{array}{c|c} x & r \\ \hline f_{\text{lim}} & + \end{array} \quad \text{و} \quad \begin{array}{c|c} x & r \\ \hline f_{\text{lim}} & - \end{array} \quad \leadsto \quad r+ab < 0$$

$$a = -p \quad b = -r$$

مثال) $y = \sqrt{x^2 - x} \rightarrow x^2 - x \geq 0 \quad x(x-1) \geq 0 \quad x(x-1)(x+1) \geq 0$

$$\begin{array}{c|ccc} x & -1 & 0 & 1 \\ \hline D_{f_{\text{lim}}} & - & + & - \end{array} \quad D_{f_{\text{lim}}} = [-1, 0] \cup [1, +\infty)$$

$\hookrightarrow y = \frac{1}{\sqrt{|x|-1}} \quad |x|-1 \neq 0 \quad |x| \neq 1 \quad x \neq \pm 1 \quad D_{f_{\text{lim}}} = \mathbb{R} - \{\pm 1\}$

مثال) $y = \sqrt{\frac{1}{|x| - [x]}} \rightarrow |x| - [x] \neq 0 \quad |x| \neq [x] \quad x \neq 0, 1$

$$D_{f_{\text{lim}}} = \mathbb{R} - \{0, 1\}$$

$\hookrightarrow \sqrt{x} + \sqrt{y} = 9 \rightarrow x \geq 0 \rightarrow \sqrt{y} = 9 - \sqrt{x} \quad 9 - \sqrt{x} \geq 0 \quad \sqrt{x} \leq 9 \quad x \leq 81$

$$\frac{\text{II, I}}{9} \rightarrow D_{f_{\text{lim}}} = [0, 81]$$

$$y = \frac{1}{\sqrt{\left[x - \frac{1}{r}\right] + \left[x + \frac{p}{r}\right]}} \Rightarrow \left[x - \frac{1}{r}\right] + \left[x + \frac{p}{r}\right] \geq 0$$

$$\left[x - \frac{1}{r}\right] + \left[x - \frac{1}{r} + \frac{p}{r}\right] \geq 0 \quad r\left[x - \frac{1}{r}\right] + r \geq 0$$

$$\left[x - \frac{1}{r}\right] + 1 \geq 0 \quad \left[x - \frac{1}{r}\right] \geq -1 \quad x - \frac{1}{r} \geq 0 \quad x \geq \frac{1}{r} \quad D_{f_{\text{lim}}} = \left[\frac{1}{r}, +\infty\right)$$

$$y = \sqrt{1 - \log(x-a)} \quad x > \frac{a}{r} \quad 1 - \log(x-a) \geq 0 \quad \log(x-a) \leq 1$$

$$x \leq 1+a \quad x \leq \frac{a+1}{r} \quad \frac{a}{r} < x \leq \frac{a+1}{r} \rightarrow x \in \left(\frac{a}{r}, \frac{a+1}{r}\right]$$

$$c-b = \frac{(a+1)}{r} - \frac{a}{r} = \frac{1}{r}$$