

کمیادفراصتی یازدهم دوازدهم ششمه نالفت : ۴

①  $y = \sqrt{(a-r)x^2 + ax + b} \rightsquigarrow a-r=0 \rightarrow a=r$

$\sqrt{rx+b} \rightsquigarrow \frac{-b}{r} = r \rightarrow b = -r^2$

②  $\sqrt{x^2 + rx + r - m^2}$  بسیار مهم و یادمان

$x^2 + rx + r - m^2 \geq 0 \rightsquigarrow \min_{x \in \mathbb{R}} = \frac{-r}{2} = -1 \rightsquigarrow r=2$  تقریب  $1-2+r-m^2 \geq 0 \rightarrow 1-m^2 \geq 0, m^2 \leq 1, -1 \leq m \leq 1$

$1-(-1)=2$

③  $r-x^2 \geq 0 \rightarrow x^2 \leq r \rightarrow -r \leq x \leq r$  درصورت

$[x] + [-x] + 1 \neq 0 \rightarrow [x] + [-x] \neq -1$  این عدد صحیح نهایی بر این است

④ الف)  $\sqrt{\frac{x^2(x+r)}{-r^2}} \geq 0$  جدول علامت  $\begin{matrix} -r & * & 0 \\ -r & + & + \end{matrix}$   $D_f = [-r, +\infty)$

$x=1$  ب)  $\sqrt{\frac{(x^2-1)(x^2-rx^2)}{x^2-1}}$  جدول علامت  $\begin{matrix} -1 & * & 1 & r \\ + & - & - & - & + \end{matrix}$   $D_f = (-\infty, -1] \cup \{0\} \cup [r, +\infty)$

⑤ الف)  $\sqrt{|x-2|-3} \rightarrow |x-2|-3 \geq 0 \rightarrow |x-2| \geq 3 \rightarrow x-2 \geq 3 \vee x-2 \leq -3 \rightarrow x \geq 5 \vee x \leq -1$

ب)  $\sqrt{r-|x|} \rightsquigarrow r-|x| \geq 0 \rightarrow |x| \leq r \rightarrow -r \leq x \leq r$  جدول علامت  $\begin{matrix} -r & + & 0 & r \\ - & - & - & + \end{matrix}$   $D_f = [-r, r]$

⑥ الف)  $1-|x| \geq 0 \rightsquigarrow |x| \leq 1 \rightarrow \begin{cases} x=|x| \rightsquigarrow x \geq 0 \rightarrow x^2 \leq 1 \rightsquigarrow 0 \leq x \leq 1 \\ -x=|x| \rightsquigarrow x \leq 0 \rightarrow (-x)^2 \leq 1 \rightsquigarrow -1 \leq x \leq 0 \end{cases} \rightarrow D_f = [-1, 1]$

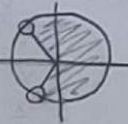
ب)  $\frac{1}{\sqrt{r-|x-1|-1}} \rightsquigarrow r-|x-1|-1 > 0 \rightarrow r > |x-1| \rightarrow -r < x-1 < r \rightarrow r+1 > x > r-1 \rightarrow D_f = (r-1, r+1)$

⑦ الف)  $\cos \neq 0 \rightsquigarrow R = \left\{ k\pi + \frac{\pi}{2} \right\}$  جدول علامت  $\begin{matrix} \cos & * & 0 \\ \cos & + & - \end{matrix}$   $\rightarrow r\cos-1 \neq 0, \cos \neq \frac{1}{r}$  جدول علامت  $\begin{matrix} \cos & * & \frac{1}{r} \\ \cos & - & + \end{matrix}$   $R = \left\{ k\pi + \frac{\pi}{r} \right\}$

① ا)  $\frac{x+r}{|rx+1|-|x+r|} \rightarrow |rx+1| = |x+r| \rightarrow rx+1 = x+r \sim x=r$   
 $rx+1 = -x-r \sim x = -\frac{r}{r}$  }  $D_f \cdot R - \left\{ r, -\frac{r}{r} \right\}$

ب)  $\sqrt{|rx+1|-|x+r|} \sim |rx+1|-|x+r| \geq 0 \rightarrow |rx+1| \geq |x+r|$   $\left\{ \begin{array}{l} -r \leq x \rightarrow x \leq -r \\ -\frac{1}{r} \leq x \leq -r \rightarrow -r \leq x \leq -\frac{1}{r} \\ -\frac{1}{r} \geq x \rightarrow x \geq r \end{array} \right\} \rightarrow D_f = \left( -\infty, -\frac{r}{r} \right] \cup [r, \infty)$

①  $\sqrt{\log \frac{(rx-1)}{x}}$   
 $\log \frac{rx-1}{x} \geq 0 \rightarrow rx-1 \geq x \rightarrow x > \frac{1}{r}$  (1)  
 $\log \frac{rx-1}{x} \geq 0 \rightarrow rx-1 \geq 1 \rightarrow x > 1$  (2)  
 $\log \frac{rx-1}{x} \geq 0 \rightarrow 0 < \log \frac{rx-1}{x} < 1 \rightarrow \log \frac{rx-1}{x} < 1 \rightarrow rx-1 < x \rightarrow r < x$  (3)  
 $\rightarrow D_f = 1 < x \leq r \rightarrow (1, r]$

② ا)  $\log \frac{r \cos x + 1}{x+1} \rightarrow r \cos x + 1 \geq 0 \sim \cos x \geq -\frac{1}{r}$    $D_f = R - \left[ \pi r \pi + \frac{r\pi}{r}, \pi r \pi + \frac{r\pi}{r} \right]$   
 $\sim \left( \pi r \pi + \frac{r\pi}{r}, \pi r \pi + \frac{r\pi}{r} \right)$

ب)  $\sqrt{\log \frac{x-1}{x+1}}$   
 $\frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 0 \rightarrow x-1 \geq 0 \rightarrow x \geq 1$  (1)

$\log \frac{x-1}{x+1} \geq 0 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1$   
 $\rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1 \rightarrow \frac{x-1}{x+1} \geq 1$

$x+1 \leq 0 \rightarrow x \leq -1$  (2)  
 $\rightarrow D_f = (-\infty, -1)$