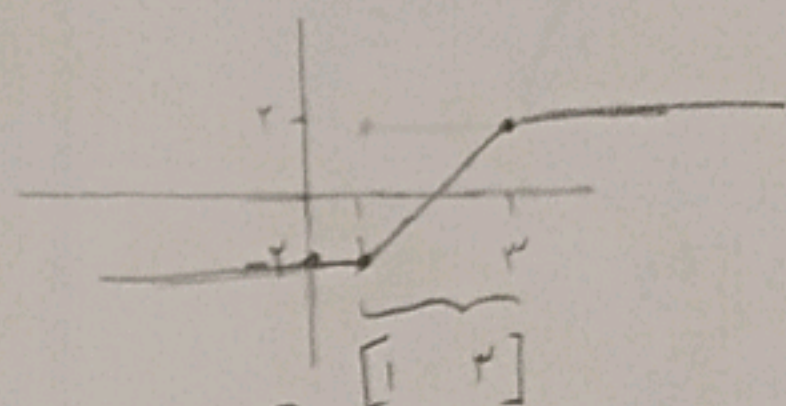
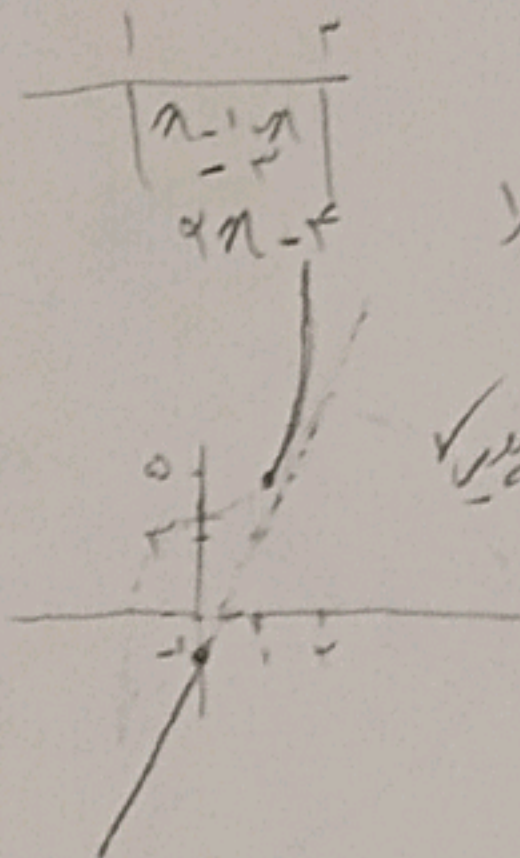


$f(n) = |n-1| - |n-2|$ $[a, b]$. $\max f^{-1}(n)$?



$f(n) = \begin{cases} 0 & n < 1 \\ n-1 & 1 \leq n \leq 2 \\ 1 & n > 2 \end{cases}$

$f'(n) = \begin{cases} 1 & n > 2 \\ 0 & n < 1 \end{cases}$



$y = \frac{2n+1}{n-2} \Rightarrow n = \frac{y+1}{y-2}$

$\textcircled{1} \Rightarrow n = \frac{y+1}{y-2} \Rightarrow \frac{y+1}{y-2} \geq 0 \Rightarrow n \geq 0$
 $\textcircled{2} \Rightarrow n = \frac{y+1}{y-2} \Rightarrow \frac{y+1}{y-2} \leq 0 \Rightarrow n \leq 0$

$f(n) = n^2 - \frac{(a+1)^2}{n+2}$ $f'(a) = \frac{2a+1}{a+2}$ $b < a$. $f^{-1}(b)$?

$n^2 + 2n^2 - n^2 + 1 = 2n^2 - 2n \Rightarrow \frac{-2n-1}{n+2} = \frac{-2n-1}{n+2} = -\frac{2n+1}{n+2} \Rightarrow \frac{-2n-1}{n+2} = \frac{f^{-1}(n)-1}{-2+2} = \frac{f^{-1}(n)-1}{0}$

$f(n) = \frac{n}{n^2+1} \Rightarrow n = \frac{y}{y^2+1} \Rightarrow ny^2 + n - y = 0 \Rightarrow y = \frac{1 \pm \sqrt{1-4n^2}}{2n} \Rightarrow y = \frac{1 + \sqrt{1-4n^2}}{2n}$

