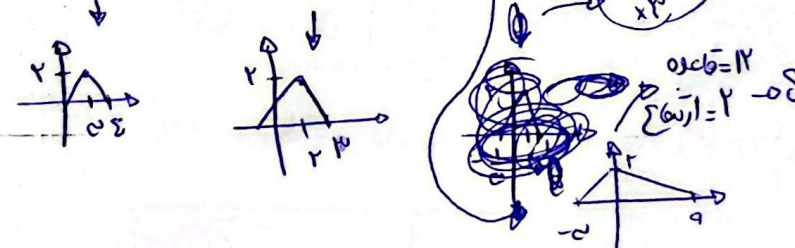


• $f(0) = 0 \Rightarrow 0 \in [-2, 2]$
 $\rightarrow f(x_1 - 2) = x_1 - 2 \in [-2, 2]$
 $\rightarrow x_1 \in [-2, 4] \Rightarrow x \in \left[-\frac{2}{2}, \frac{4}{2}\right] = [1, 2]$

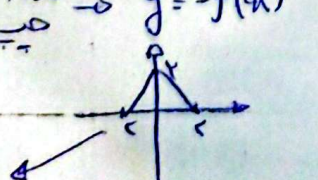
$x \in [-2, 2] \Rightarrow 3x \in [-6, 6]$
 $\rightarrow 3x - 2 \in [-8, 4]$
 $\rightarrow D_f = [-8, 4]$

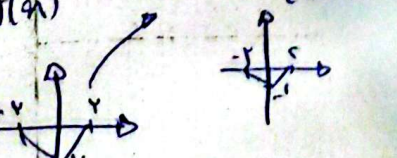
معکوس $\rightarrow x_1 - 2 + \sqrt{x_1 - 2} = y \Rightarrow x_1 = y - 2 + \sqrt{x_1 - 2}$

چون معکوس تابع با خود تابع در خط $y = x$ برابر است پس ما
 معکوس از معکوس تابع استفاده کنیم
 (فرض نذار واقعاً)
 $\rightarrow x_1 - 2 + \sqrt{x_1 - 2} = x_1$
 $\rightarrow \sqrt{x_1 - 2} = 2 \Rightarrow x_1 = 6 \Rightarrow y = 6$

$2f(x_{n+1}) \rightarrow f(x_{n+1}) \rightarrow f(3x_n) \rightarrow f(x_n)$

 $\omega' = \frac{1}{3}$
 $\delta = \frac{1}{3} \Rightarrow \delta = \frac{1}{3} \Rightarrow \delta = \frac{1}{3}$

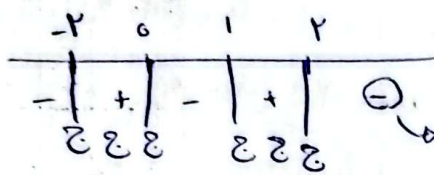
~~$f(x) = 2x - 1$~~ $A' \rightarrow \frac{y-a}{2} = f\left(\frac{x-a}{2}\right)$
 $\frac{y-a}{2} = -3 \Rightarrow y = a - 6$, $\frac{x-a}{2} = 2 \Rightarrow x = a + 4$
 $\rightarrow a - 6 = 2(a + 4) - 1 \Rightarrow a = -9$

~~$f(x) = 2x - 1$~~
 $y = -f(x)$


$y = f(x)$
 $\frac{1}{2}f(x) = \frac{1}{2}(2x - 1) = x - \frac{1}{2}$
 $\frac{1}{2}f(-x - 2) = \frac{1}{2}(2(-x - 2) - 1) = -x - \frac{5}{2}$


$$\omega \rightarrow \frac{1}{\omega} \rightarrow \frac{1}{\omega} - 1 = \frac{1}{\omega} - \frac{\omega}{\omega} \rightarrow \frac{1 - \omega}{\omega} \rightarrow \frac{1 - \omega}{\omega} = 0 \rightarrow y = 0$$

$$\sqrt{x} \rightarrow x \geq 0$$



$$D_f = [-2, 0] \cup [1, 2]$$

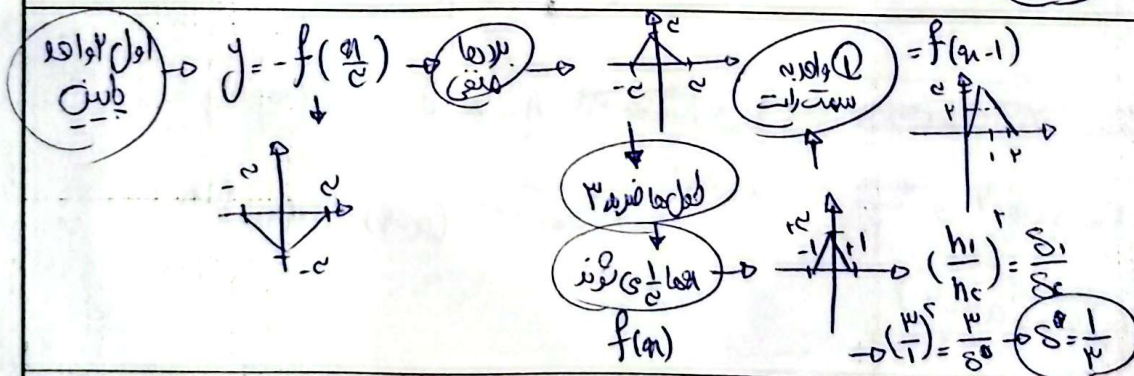
$$g(n) = \frac{1}{n} \rightarrow f(n) = \sum_{k=1}^n \frac{1}{k} - 2$$

$$-g(0) = 2 \rightarrow \frac{1}{k-1} - 2 = 2 \rightarrow \frac{1}{k-1} = 4 \rightarrow k-1 = \frac{1}{4} \rightarrow k = \frac{5}{4} \rightarrow k > 0 \rightarrow k = \frac{5}{4}$$

$$f(n) = -\left(\frac{1}{n+1}\right) \rightarrow \frac{1}{n+1} = \frac{1}{n} \rightarrow n+1 = n \rightarrow 1 = 0$$

$$f(n) = -\left(\frac{1}{n+1}\right) \rightarrow f(n) = -\left(\frac{1}{n+1}\right) + a \rightarrow \frac{1}{n+1} = \frac{1}{n} + a$$

$$\frac{1}{n+1} - \frac{1}{n} = a \rightarrow \frac{n - (n+1)}{n(n+1)} = a \rightarrow \frac{-1}{n(n+1)} = a \rightarrow \sum_{n=1}^{\infty} \frac{-1}{n(n+1)} = 0 \rightarrow -a = 2$$



$$f(x) = -\frac{1}{x+1} \rightarrow \frac{1}{x+1} = \frac{1}{x} \rightarrow x+1 = x \rightarrow 1 = 0$$

$$\frac{1}{x+1} = \frac{1}{x} \rightarrow x+1 = x \rightarrow 1 = 0 \rightarrow x = -1$$

$$f\left(\frac{1}{a}\right) = f\left(\frac{1}{c}\right) = \left|\frac{1}{c} - 1\right| - 2 = \frac{1}{c} - \frac{4}{c} = -\frac{3}{c}$$