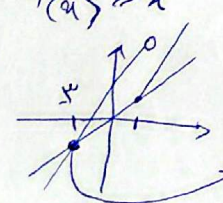


## ۲. آخرین مباحث نوشتن

| کلاس یازدهم ریاضی ۱                                                                                                                                                                                                                                                                                                                                                                                                | نام و نام خانوادگی: سید الهادی                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>الف) <math>\frac{n-1}{n} - \frac{n}{n-1} \geq 0</math></p> <p>۱ <math>\frac{(n-1)^2 - n^2}{n(n-1)} \geq 0</math></p> <p><math>\frac{-2n+1}{n(n-1)} \geq 0</math> <math>\frac{0}{+ \phi - \phi +}</math></p> <p><math>\Rightarrow D_f = (-\infty, 0) \cup [\frac{1}{2}, +\infty)</math></p>                                                                                                                      | <p>ب) <math>n \neq -1</math> <math>n \neq 0</math> <math>\frac{3}{n-1} + \frac{1}{n+2} \neq 0</math></p> <p><math>n \neq 1</math> <math>n \neq -2</math></p> <p><math>\frac{f(n)+0}{n^2+n-2} \neq 0</math></p> <p><math>n \neq \frac{-0}{2} \leftarrow</math></p> <p><math>\Rightarrow D_f = \mathbb{R} - \{-2, -\frac{0}{2}, -1, 0, 1\}</math></p>                                     |
| <p>الف) <math>(3^{-n} - 3^2)(2^5 - 2^{2n}) \geq 0</math></p> <p><math>3^2(3^{-n-2} - 1)(1 - 2^{2n-5}) \geq 0</math></p> <p>۲ <math>3^{-n-2} = 1 \rightarrow -n-2=0</math><br/><math>n = -2</math></p> <p><math>1 = 2^{2n-5} \rightarrow 2n-5=0</math><br/><math>n = \frac{5}{2}</math></p> <p><math>\frac{-2}{+ \phi - \phi +}</math> <math>\Rightarrow D_f = (-\infty, -2] \cup [\frac{5}{2}, +\infty)</math></p> | <p>ب) <math>n-1 \geq 0 \Rightarrow n \geq 1</math></p> <p><math>\sqrt[n]{y+1} = 3 - \sqrt[n]{n-1}</math></p> <p><math>3 - \sqrt[n]{n-1} \geq 0 \rightarrow \sqrt[n]{n-1} \leq 3</math></p> <p><math>n-1 \leq 1 \rightarrow n \leq 12</math></p> <p><math>\Rightarrow 1 \leq n \leq 12</math></p> <p><math>\Rightarrow D_f = [1, 12]</math></p>                                          |
| <p>۳ <math>n^2 - n - 2 &gt; 0</math></p> <p><math>(n+1)(n-2) &gt; 0</math></p> <p><math>\frac{-1}{+ \phi - \phi +}</math></p> <p><math>n^2 - 1 \geq 0</math></p> <p><math>n^2 \geq 1</math></p> <p><math>n \geq 1, n \leq -1</math></p> <p><math>\Rightarrow D_f = (-\infty, -1) \cup (2, +\infty)</math></p>                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>۴ <math>n = -2 \rightarrow f(n) = 0</math></p> <p><math>\sqrt{3-2a-\varepsilon} = 0</math></p> <p><math>-1-2a=0</math></p> <p><math>a = -\frac{1}{2}</math></p>                                                                                                                                                                                                                                                 | <p><math>n=b \rightarrow f(n)=0</math></p> <p><math>\sqrt{3-\frac{1}{p}b-b^2} = 0</math></p> <p><math>\Delta = \frac{1}{\varepsilon} + 12 = \frac{\varepsilon 9}{\varepsilon}</math></p> <p><math>b = \frac{\frac{1}{p} \pm \frac{\sqrt{\varepsilon 9}}{p}}{-2}</math></p> <p><math>\Rightarrow a+b = -\frac{1}{p} + \frac{3}{p}</math></p> <p><math>\Rightarrow \frac{2}{p}</math></p> |
| <p>۵ <math>f(n) - n \geq 0</math></p> <p><math>f(n) \geq n</math></p> <p></p> <p><math>2n+3 = n</math><br/><math>n = -3</math></p>                                                                                                                                                                                              | <p><math>f(n) = \begin{cases} 2n-2 &amp; n &gt; 1 \\ 2n+3 &amp; n &lt; -1 \end{cases}</math></p> <p><math>\frac{n}{1} \frac{2}{\varepsilon}</math></p> <p><math>\frac{n}{1} \frac{0}{\varepsilon}</math></p> <p><math>\Rightarrow D_f = [-3, +\infty)</math></p>                                                                                                                        |

$$u = \sin \frac{\pi}{\sqrt{3}} + \cos \sqrt{3} \Rightarrow \sqrt{3} \left( \sin \frac{\pi}{\sqrt{3}} + \cos \sqrt{3} \right)^2 + \varepsilon \left( \sin \frac{\pi}{\sqrt{3}} + \cos \sqrt{3} \right)$$

$$\sqrt{3} \left( \frac{\sqrt{3}}{\varepsilon} + 1 + \sqrt{3} \right) - \sqrt{3} \left( \frac{\sqrt{3}}{\sqrt{3}} + 1 \right) = \frac{\sqrt{3}}{\varepsilon} + \sqrt{3} + \sqrt{3} - \sqrt{3} - \sqrt{3} - \varepsilon$$

$$= \frac{1}{\varepsilon}$$

$$f(a) = \frac{a+1}{a-1} \Rightarrow a \neq 1$$

$$f(f(a)) = \frac{\frac{a+1}{a-1} + 1}{\frac{a+1}{a-1} - 1} = \frac{a+1+a-1}{a+1-a-1} = \frac{2a}{a-1} = a$$

به ازای هر مقادیری از  $a$  به جز  $\{1\}$  مربع است زیرا  $\{1\}$  عبارت را تعریف نشده می‌اند.

$a = \mathbb{R} - \{1\}$

$$u^2 - \varepsilon u = -\varepsilon$$

$$u^2 - \varepsilon u + \varepsilon = 0$$

$$(u-1)^2 = 0 \Rightarrow u = 1$$

$$\sqrt{u^2 - 1} = \sqrt{1 - 1} = 0$$

$$u^2 - 1 = \varepsilon$$

$$u^2 = 1 + \varepsilon$$

$$u = \pm \sqrt{1 + \varepsilon} \Rightarrow a = \pm \sqrt{1 + \varepsilon}$$

$$u + \sqrt{3} = -\sqrt{3} \Rightarrow u = -2\sqrt{3} \Rightarrow \sqrt{3} + \sqrt{3} + 2\sqrt{3} = 4\sqrt{3} = f(-\sqrt{3})$$

$$u + \sqrt{3} = \varepsilon \Rightarrow u = \varepsilon - \sqrt{3} \Rightarrow 1 - \sqrt{3} + \sqrt{3} = 1 = f(\varepsilon)$$

$$f(\varepsilon) \times f(-\sqrt{3}) = 1 \times 4\sqrt{3} = 4\sqrt{3}$$

$$\sqrt{3} \cos u + \omega \cos u = \sqrt{3} \delta$$

$$\sqrt{3} \cos u + \delta \cos u - \sqrt{3} \delta = 0$$

$$\Delta = \sqrt{3} \delta + \delta \sqrt{3} = 1$$

$$\cos u = \frac{-\delta \pm 1}{\Delta} \rightarrow \cos u = \frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{3}} = \frac{1}{3}$$

$$\cos u = \frac{1}{3} \Rightarrow u = \frac{\pi}{3}, \frac{5\pi}{3}$$

$$\Rightarrow \tan u = \left( \frac{1}{\sqrt{3}} \right)^2 \cdot \frac{1}{(-\sqrt{3})^2}$$

$$= \frac{1}{3} = f\left(\frac{1}{\sqrt{3}}, \omega\right)$$