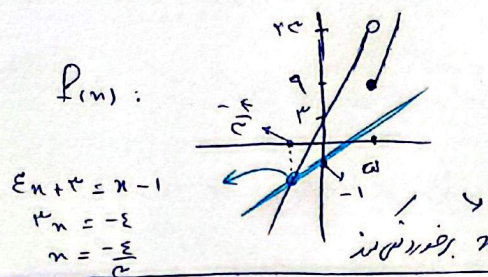


نام خانوادگی: آریین عظیمی ۲۰ تکلیف = ۳ آریین علم دوستی ۲۱: در ادامه دفتر A

$$f(n) = \begin{cases} 2n-1 & [n] > \varepsilon \rightarrow n > 1 \\ \varepsilon n + c & [n] \leq \varepsilon \rightarrow n \leq 1 \end{cases}$$

$$y = \sqrt{f(n) - x + 1} \rightarrow D_f: f(n) - n + 1 \geq 0$$

$f(n) \geq n - 1$  ← طبق شکل:



$$D_f: \left[-\frac{\varepsilon}{2}, +\infty\right)$$

$$y = \frac{\varepsilon n^2 + c n + 1}{(\varepsilon n^2 + \varepsilon n + 1)^r} = \frac{\varepsilon (1n^2 + 12n^2 + 4n + 1)}{((2n+1)^2)^r} = \frac{\varepsilon (2n+1)^2}{(2n+1)^{2r}} = \frac{\varepsilon}{(2n+1)^{2r-2}}$$

$$D_f: \mathbb{R} - \left\{-\frac{1}{r}\right\}$$

$$f(n) = \begin{cases} \frac{n^r + r n^r - n - r}{n^r - 1} & n \neq \pm 1 \rightarrow \frac{n^r(n+r) - (n+r)}{n^r - 1} = \frac{(n+r)(n^r - 1)}{(n^r - 1)} = n+r \\ \frac{an+r}{n+b} & n = \pm 1 \end{cases}$$

$$g(n) = n + c$$

$$c = r$$

$$g(n) = n + r$$

$$\begin{aligned} \rightarrow f(1) &= g(1) = \frac{a+r}{1+b} = r \rightarrow a+r = r+r+b \rightarrow \begin{cases} a+c = 1 \\ a+b = r \\ \varepsilon b = r \\ b = \frac{r}{\varepsilon} \end{cases} \\ \rightarrow f(-1) &= g(-1) = \frac{-a+r}{-1+b} = 1 \rightarrow -a+r = -1+b \\ &\quad a+b = r \end{aligned}$$

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

$$f(n) = \frac{n+1}{n-c} \quad g(n) = \frac{n^r-1}{n^r+an+b} = \frac{(n+1)(n-1)}{n^r+an+b} \rightarrow n^r+an+b = (n-1)(n-c)$$

$$n^r+an+b = n^r + (-1-c)n + c \rightarrow b=c$$

$$D_f: \mathbb{R} - \{c\} \rightarrow \text{مجموعه مقادیر n که در آن مخرج صفر نشود}$$

$$(1) = (n-1)(n-c) - (n-c)^2 \rightarrow c > 1$$

$$\rightarrow b=c$$

$$\rightarrow a = -1-c$$

$$c > 1 \rightarrow a+b+c = -1+1+1 = 1$$

$$f(n) = (n-c)^r (n-1)$$

$$n^r - \varepsilon n + c - n^r - \varepsilon n - c = -2n$$

$$g(n) = f(n+1) + f(1-n) = n(n-r)^r - n(n+r)^r = n((n-r)^r - (n+r)^r) = -2n^r$$

$$\begin{aligned} (n+1-c)^r (n+1-1) &= (1-n-c)^r (1-n-1) \\ \rightarrow n(n-r)^r &\rightarrow (-n-r)^r (-n) = -n(n+r)^r \end{aligned}$$

$$g(n) = -2n^r$$

$$f(1-r_n) = \begin{cases} \sqrt{n}+r & n \leq 0 \\ \varepsilon \sqrt{n} & n > 0 \end{cases} \quad f(-1)+f(0) = ?$$

$$\rightarrow f(-1) = \begin{matrix} 1-r_n = -1 \\ r_n = r \\ n = 1 \end{matrix} \rightarrow f(-1) = \varepsilon \sqrt{1} = \varepsilon \checkmark$$

$$\rightarrow f(0) = \begin{matrix} 1-r_n = 0 \\ r_n = -r \\ n = -1 \end{matrix} \rightarrow f(0) = \sqrt{-1}+r = 1 \checkmark$$

$$\varepsilon + 1 = \textcircled{\omega} \checkmark$$

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$$f(n+\sqrt{n}) = n^{\varepsilon} + cn$$

$$f(4) = ? \rightarrow n+r_n = 4$$

$$n+\sqrt{n}-4 = 0$$

$$(\sqrt{n}+c)(\sqrt{n}-2) = 0$$

$$n = 4$$

$$\rightarrow f(n+\sqrt{n}) = f^{\varepsilon} + c(4) = 2 \cdot 4 + 12 =$$

$$\textcircled{248} \checkmark$$

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$$f(m) = n^{\varepsilon} + n$$

$$f(m-1) + f(1-n) = (\cancel{n-1})^{\varepsilon} + \cancel{n-1} + (\cancel{1-n})^{\varepsilon} + \cancel{1-n} = \textcircled{\omega} \checkmark$$

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$$f(n) = \sqrt{\varepsilon n - ca} + k - 1 \rightarrow D_f: \varepsilon n - ca > 0$$

$$n > \frac{ca}{\varepsilon}$$

$$g(n) = \sqrt{b - \varepsilon n} + ck$$

$$\rightarrow D_g: b - \varepsilon n > 0$$

$$n \leq \frac{b}{\varepsilon}$$

$$2f - g = \{ (1, k) \}$$

$$\hookrightarrow 2f(1) = 2\sqrt{\varepsilon - ca} + 2k - 1$$

$$\hookrightarrow -g(1) = -\sqrt{b - \varepsilon} - ck$$

$$\begin{matrix} a = \frac{\varepsilon}{2} \\ b = \frac{\varepsilon}{2} \end{matrix}$$

$$\rightarrow \sqrt{\varepsilon - ca} - \sqrt{b - \varepsilon} + 2k - 1 - ck = k$$

$$\rightarrow -k - 1 = k$$

$$2k = -1 \rightarrow k = -1$$

$$\Rightarrow = f - 2 + 1 = \textcircled{15} \checkmark$$

$$2a - \frac{b}{\varepsilon} - k$$

در این مرحله در افعال صبر و در مجموع از اشتباهات دانش‌آموزان  
که نیمه پس از آن دانش‌آموز 2f - g فقط شکل (1)  
محاسبه پس از اشتباه دانش‌آموز 2f و g برابر (1)  
محاسبه پس از اشتباه دانش‌آموز 2f و g برابر (1)

(2)  
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$$f(n) = \sqrt{m-n} + n \rightarrow D_f: m-n > 0$$

$$n \leq m$$

$$g(n) = \sqrt{rn} + r \rightarrow D_g: rn + r > 0$$

$$n > -1$$

$$D_{fg} = [-1, v] = D_f \cap D_g$$

$$f-g(x) = 4\sqrt{r} \rightarrow f(x) = \sqrt{r} + n = n + r$$

$$g(x) = \sqrt{1} = 2\sqrt{r}$$

$$f-g(x) = n + r - 2\sqrt{r} = 4\sqrt{r}$$

$$n = -r + 4\sqrt{r}$$

$$m+n = v - r + 4\sqrt{r} = \textcircled{\omega + 4\sqrt{r}} \checkmark$$

(2)  
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