

$r f(0) - r(r f(r) - \sum_{k=0}^r m(k) + r m - 1) \rightarrow r f(0) = r m - 1$
 $f(0) = \frac{r m - 1}{r}$
 $m = -r \rightarrow r f(r) - r(r f(0) - 1 + r m + r m - 1) \rightarrow r f(r) = r m - 1$
 $f(r) = \frac{r m - 1}{r}$
 $4 f(0) = 10 + 20m$
 $f(0) = \frac{10 + 20m}{4}$
 $\frac{10 + 20m}{4} = \frac{r m - 1}{r}$
 $9m = 10 + 4m$
 $5m = 10$
 $m = 2$

$\frac{10}{2} = \frac{r f(0) + 1}{r}$
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$\left(\frac{10}{2} + 1 \right) \times \frac{1}{r} = f(0)$
 $\frac{10}{2} \times \frac{1}{r} = \frac{f(0)}{r}$

$f = am + b, f(n) + f\left(\frac{1}{n}\right) = \frac{r m^2 - 11m + 6}{n}, f(-1) = ?$
 $am + b + \frac{a}{m} + b = \frac{am^2 + 2bm + a}{n} = \frac{r m^2 - 11m + 6}{n}$

$a = r, b = -9 \rightarrow f(m) = r m - 9, f(-1) = -r - 9 = -9$

$f(m) = (m-1)\sqrt{1-m} \rightarrow D: (1 \geq m)$
 $g(m) = -\sqrt{(1-m)^3} \rightarrow D: (1 \geq m)$

$-|1-m|\sqrt{1-m} \rightarrow f(m) = (1-r)\sqrt{r}$
 $g(m) = -r\sqrt{r}$

$f(m) = m\sqrt{m} \rightarrow D: m \geq 0$

$g(m) = \sqrt{m^3} \rightarrow D: m \geq 0$
 $\frac{r\sqrt{r}}{r\sqrt{r}} = r$

$r f(\omega) = f(-r) : a, f(m) = \begin{cases} (a+1)(m+2) & m \geq 1 \\ ra + 2m & m \leq 1 \end{cases}$
 $f(a+1)(v) = \frac{r a}{r a + 2a}$
 $va + v = ra - r \rightarrow ra = -9 \rightarrow a = -\frac{9}{r}$

$(r\sqrt{r})(r+\sqrt{r}) = 1 \rightarrow \frac{1}{a} = \frac{1}{m}$
 $f\left(\frac{1}{m}\right) = \sqrt{\frac{1}{m}} + \frac{1}{\sqrt{\frac{1}{m}}} + r = \frac{1}{\sqrt{m}} + \sqrt{m} + r = f(m) \rightarrow f(m) = f\left(\frac{1}{m}\right)$

$f(r+\sqrt{r}) = f\left(\frac{1}{r-\sqrt{r}}\right) = f(r\sqrt{r})$
 $f(r-\sqrt{r}) = f\left(\frac{1}{r+\sqrt{r}}\right) = f(r\sqrt{r})$
 $f(r) = \frac{1}{\sqrt{r}} + \sqrt{r} + r = A + r$

$= m + \frac{1}{m} + r = (r-\sqrt{r}) + (r+\sqrt{r}) + r = 2r = 4 \Rightarrow A = 4$
 $f(r-\sqrt{r}) = \sqrt{r} + r \Rightarrow f(r-\sqrt{r}) + f(r+\sqrt{r}) = 2(\sqrt{r} + r) = 2\sqrt{r} + 2$

$\begin{cases} (r f(m) - r f(-m) = \sum_{k=0}^r m^k - m)^{x^r} \\ (r f(m) - r f(m) = \sum_{k=0}^r m^k + m)^{x^r} \end{cases} \rightarrow \begin{cases} f(m) - f(-m) = 11m^2 - 2m \\ f(m) - f(m) = 11m^2 + 2m \end{cases}$
 $f(m) = -\sum_{k=0}^r m^k - \frac{m}{\omega}$
 $- \omega f(m) = r m^2 + 2m$

$$\begin{cases} f(n) = [\sqrt{n} - [\sqrt{n}]] \Rightarrow [\sqrt{n}] - [\sqrt{n}] = 0 \\ g(n) = \sqrt{n - |n|} \geq 0 \end{cases}$$

D $\Rightarrow n > 0$

$n \geq |n| \rightarrow D = n > 0$

الف) $\left(\frac{f+g}{f-g}\right)(1) \rightarrow \frac{1+2}{2-1} = 3$ ن شترت = ۲ و ۳ و ۰

ب) $\left(\frac{f+g}{f-g}\right)(2) = \frac{2+2}{2-2} = \text{دن}$

ج) $f(0)g(-1) \Rightarrow 0 \times 1 = 0$

الف) $g(n) = f(4n-1) \Rightarrow g(n) = \left\{ \begin{matrix} (2, \omega) & (-1, -\omega) & (-1, -2) & (-2, -1) \\ & & & (4, 1) \end{matrix} \right\}$

باید $3n-1$ برابر D قرار بدهی تا n های f آن ها را مشخصه!

ب) $h(n) = \underbrace{f(|n|)}_{\substack{\cdot 2, 3}}$

$h(2), h(-2) \rightarrow f(2) = 1$

$h(0) \rightarrow f(0) = \omega$

$f(0) = h(0, h(-0)) = -1$

$h(n) = \left\{ \begin{matrix} (2, \omega) & (-1, -\omega) & (-1, -2) & (-2, -1) \\ & & & (3, -1) \end{matrix} \right\}$

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۱۰- الف) یکدیگر میزنیم و طبق آن n های جدید را نیز به f آن ها اضافه می‌کنیم.

$$x_{n-1} = t \rightarrow u = \frac{t+1}{3} \quad f(x_{n-1}) = \left\{ \left(\frac{t+1}{3}, 1 \right), \left(\frac{-1+t}{3}, 4 \right), \left(\frac{t+1}{3}, 5 \right), \left(\frac{-2+t}{3}, 2 \right), \left(\frac{t+1}{3}, -1 \right) \right\}$$

$$f(x_{n-1}) = \left\{ (1, 1), (0, 4), \left(\frac{1}{3}, 5 \right), \left(-\frac{1}{3}, 2 \right), \left(\frac{4}{3}, -1 \right) \right\}$$