

$$r f(0) - r(f(r) - \sum_{i=0}^{r-1} f(i) - m(0) + r_{m-1}) \rightarrow r f(0) = r_{m-1}$$

②

$$f(0) = \frac{r_{m-1}}{r}$$

$$m = -r$$

$$\rightarrow r f(x) - r(f(-r) f(0) = 14 + r_m + r_{m-1})$$

$$* m = r f_0 + 1$$

$$4 f(0) = 10 + 0m$$

$$f(0) = \frac{10 + 0m}{4}$$

$$\frac{10 + 0m}{4} = \frac{r_{m-1}}{r}$$

$$9m \cdot x = 10 + 9m$$

$$m = \frac{10}{9}$$

$$\frac{10}{9} = \frac{r f(0) + 1}{r}$$

$$\left(\frac{10}{9} + 1 \right) \times \frac{1}{r} = f(0)$$

$$\frac{10}{9} \times \frac{1}{r} = \frac{10}{r} \rightarrow \frac{10}{r} = f(0)$$

① $\frac{10}{9}$

(y)

$$f = am + b, f(n) + f\left(\frac{1}{n}\right) = \frac{r_{m-1} - 11m + 0}{n}, f(-1)?$$

$$am + b + \frac{a}{m} + b = \frac{am^2 + 11bm + a}{m} = \frac{r_{m-1} - 11m + 0}{m}$$

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

$$f f(m) = (m-1) \sqrt{1-m} \rightarrow D: (1, \infty)$$

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

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

$$f f(m) = m \sqrt{m} \rightarrow (m, \infty) = D$$

$$g(m) = \sqrt{m^3} \rightarrow D = \{x | \sqrt{m}\} \rightarrow (m, \infty)$$

$$\frac{r \sqrt{r}}{r \sqrt{r}} \leftarrow r \leftarrow \text{dividing}$$

④

المشكلة هي إيجاد A في المسألة

①

$$r f(0) = f(-r) : a \quad f(m) = \begin{cases} (a+1)(m+r) & m \geq 1 \\ ra + r_m & m \leq 1 \end{cases}$$

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

$$ra + r = ra - r \rightarrow ra = -9 \rightarrow a = -\frac{9}{r}$$

$$(r - \sqrt{r})(r + \sqrt{r}) = 1 \rightarrow \text{...} \rightarrow a = \frac{1}{a}$$

②

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

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

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

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

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

$$f(r - \sqrt{r}) = \sqrt{4} + r \Rightarrow f(r - \sqrt{r}) + f(r + \sqrt{r}) = r(4 + r) = r\sqrt{4} + r$$

③

$$\begin{cases} (r f(m) - r f(-m) = \sum_{i=0}^{r-1} f(i))^{x^r} \\ (r f(m) - r f(m) = \sum_{i=0}^{r-1} f(i))^{x^r} \end{cases} \begin{cases} f f(m) - 9 f(-m) = 11m^2 - r_m \\ r f(m) - 9 f(m) = 11m^2 + r_m \end{cases}$$

$$f(m) = -\sum_{i=0}^{r-1} f(i) - \frac{m}{\omega} \leftarrow -\omega f(m) = r_m + r$$

$$\begin{cases} f(n) = [\sqrt{n} - [\sqrt{n}]] \Rightarrow [\sqrt{n}] - [\sqrt{n}] = 0 \\ g(n) = \sqrt{n - |n|} \geq 0 \end{cases} \quad D \Rightarrow n \geq 0 \quad (1)$$

$$n \geq |n| \longrightarrow D = n \geq 0 \quad \checkmark$$

الف) $\left(\frac{f+g}{f-g}\right)(1) \rightarrow \frac{1+2}{2-1} = 3$ نشارة = 2 و 3 و 0 (9)

ب) $\left(\frac{f+g}{f-g}\right)(2) = \frac{2+2}{2-2} = \text{نن}$
 $(2-2) = 0$

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

الف) $g(n) = f(n-1) \Rightarrow g(n) = \begin{cases} (2, \omega) & (-1, -1) & (0, -1) & (-2, -1) \\ & (2, 1) \end{cases} \quad (10)$

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

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

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

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

$h(n) = \begin{cases} (-2, -1) & (-2, 1) & (0, \omega) & (2, 1) \\ & (2, -1) \end{cases}$

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