

Subject: (

از قسم حساب

Date: _____

$$f^2(a) = f^2(-1) + a \rightarrow 1a + 1f = -f + 3a + a \quad (1)$$

$$1f - f a = -f - 1a \rightarrow a = -1/1$$

$$f^2(\sqrt{2}) + f^2(1/\sqrt{2}) \xrightarrow{f \cdot \sqrt{2} = \frac{1}{\sqrt{2}} \cdot \sqrt{2}} f^2(\sqrt{2}) + f^2\left(\frac{1}{\sqrt{2}}\right) \quad (2)$$

$$= \sqrt{2-\sqrt{2}} + \frac{1}{\sqrt{2-\sqrt{2}}} + \frac{1}{\sqrt{2-\sqrt{2}}} + \sqrt{2-\sqrt{2}} + f$$

$$= \frac{\sqrt{2-\sqrt{2}}}{\sqrt{2}} + \frac{\sqrt{2-\sqrt{2}}}{\sqrt{2}-1} + f = \sqrt{2-\sqrt{2}} + \sqrt{2-\sqrt{2}} + f = f + 2\sqrt{2-\sqrt{2}}$$

$$\frac{\sqrt{2-\sqrt{2}} + \sqrt{2-\sqrt{2}}}{\sqrt{2}}$$

$$f^2(1) - f^2(-1) = f - 1 \xrightarrow{\times f} f^2(1) - f^2(-1) = f \quad (3)$$

$$f^2(-1) - f^2(1) = a \xrightarrow{\times 10} -9f^2(1) + 4f^2(-1) = 1a$$

$$-9f^2(1) = f_1$$

$$f^2(1) = -\frac{f_1}{9}$$

$$f(1) = 0, f^2(-1) = -\frac{17}{9}$$

$$-\frac{17}{9} = a - b + c$$

$$a - b = \frac{-17 \cdot 17}{9 \cdot 9} - 17f(-1) = \frac{17}{9}$$

$$\frac{-17}{9} = a + b + c$$

$$\frac{17}{9} = -4f(-1)$$

$$\frac{17}{9} = -17b \rightarrow b = \frac{1}{9}, c = 0, a = \frac{17}{9}$$

$$f^2(x) = \frac{17}{9}x^2 - \frac{1}{9}x$$

Arman

$$u=0 \rightarrow f(x) = x^m - 1$$

(f)

$$u=-1 \rightarrow f(x) = \frac{14 + x^m + x^m}{18} - 1$$

$$\rightarrow 9m - 18 = 18 + 8m$$

$$m = \frac{18}{1} = 18$$

$$\rightarrow f(x) = \frac{x^{m-1}}{p} = \frac{18-1}{p} = 418$$

$$f(-1) = \frac{1+1+1}{-1} = -1 \rightarrow f(-1) = -9$$

(g)

$$(u-1)\sqrt{1-u} = -\sqrt{(1-u)^3} \quad \text{فقط با هم برابر}$$

(4)



$$u \leq 1$$



$$u \leq 1 \quad \text{فقط با هم برابر}$$

$$f(u) = g(u) \quad \checkmark$$

$$u\sqrt{u} = \sqrt{u^3} \quad \text{فقط با هم برابر}$$

(v)



$$u \geq 0$$



$$u \geq 0$$

$$\text{فقط با هم برابر}$$

$$f(u) = g(u) \quad \checkmark$$

$$[\sqrt{u}] - [\sqrt{u}] = 0$$

فقط با هم برابر

$\sqrt{u} \notin \mathbb{Z}$

$$0 \leq u < 1$$



$$D = \mathbb{R}^+, 0$$

$$\sqrt{u-|u|} = 0$$

(1)



$$D = \mathbb{R}^+, 0$$

$$f(u) = g(u) \quad \checkmark$$

Arman

$$\text{الف) } \left(\frac{x^2+9}{x^2-9} \right) (1) = \frac{1+1}{1-1} = \text{undefined} \quad \text{ج}$$

$$\text{ب) } \left(\frac{x^2+9}{x^2-9} \right) (2) = \frac{4+9}{4-9} = \frac{13}{-5} = -\frac{13}{5} \quad \text{ج}$$

$$\text{ج) } f(0) \times g(-1) = 0 \times 1 = 0 \quad \text{ج}$$

$$\text{الف) } g(n) = f^2(p_{n-1}) \rightarrow g(n) = \left\{ \begin{array}{l} (1, 1), (0, 1), \left(\frac{1}{p}, 0\right) \\ \left(-\frac{1}{p}, 1\right), \left(\frac{1}{p}, -1\right) \end{array} \right\} \quad \text{ج}$$

$$\text{ب) } h(n) = f^2(p_n) \rightarrow g(n) = \left\{ \begin{array}{l} (-1, 1), (1, 1), (0, 0), (-1, -1) \\ (1, -1) \end{array} \right\}$$