

$$f(-r) = 15a - r \quad f(\omega) = 5a + r \xrightarrow{\times 2} 15a - 15 \quad (1)$$

$$\rightarrow 15a - 5a - a = 10$$

$$10a = 10 \rightarrow a = 1$$

$$(x - \sqrt{4})(x + \sqrt{4}) = x^2 - 4 = 1 \quad (2)$$

$$\left(\sqrt{x-4} + \sqrt{x+4} \right) =$$

$$\sqrt{x-4} + \sqrt{x+4} + x(\sqrt{x-4} - \sqrt{x+4}) = \sqrt{4}$$

$$\frac{1}{\sqrt{x+4}} + \frac{1}{\sqrt{x-4}} + x = \frac{\sqrt{x-4} + \sqrt{x+4}}{1} \rightarrow \sqrt{4} + x \quad (3)$$

$$3 \times 2 f(-n) - 5 f(n) = 5n^2 + n \rightarrow 4 f(-n) - 9 f(n) = 15n^2 + 2n \quad (4)$$

$$2 \times 3 f(-n) + 2 f(n) = 5n^2 - n \rightarrow -4 f(-n) + f(n) = 15n^2 - 2n \quad (5)$$

$$-5 f(n) = 5n^2 + n$$

$$f(n) = -n^2 - \frac{n}{5}$$

$$n = 0 \rightarrow 2 f(0) = 5m - 1 \rightarrow f(0) = \frac{5m-1}{2} \quad (6)$$

$$n = -2 \rightarrow 4 f(0) = 15 + 2m + 5m - 1 \rightarrow f(0) = \frac{4m+14}{4} = \frac{m+14}{10} \quad (7)$$

$$f(0) \rightarrow \frac{5m-1}{2} = \frac{m+14}{10} \quad \frac{25m-5}{10} - 1 \rightarrow \frac{25m-15}{10} = \frac{m+14}{10}$$

$$\frac{25m-15}{10} = \frac{m+14}{10} \rightarrow 25m - 15 = m + 14 \rightarrow 24m = 29 \rightarrow m = \frac{29}{24} = \left(\frac{9}{4} \right)$$

$$f(-1) + f(-1) = \frac{1+1+1}{-1} \rightarrow 2f(-1) = -1/1 = -9 \quad (5)$$

$$f(-1) = -9$$

$$f(x) \xrightarrow{D} 1-x > 0 \rightarrow (1, 1) \quad \nabla D f(x) = D f(g) \checkmark \quad (6)$$

$$g(x) \xrightarrow{D} (1-x)^3 > 0 \rightarrow 1-x > 0 \rightarrow (1, 1) \quad \checkmark \quad F(x) = g(x)$$

$$f(x) \xrightarrow{D} x > 0 \quad \nabla D_F = D_g \quad (7)$$

$$g(x) \rightarrow x^3 > 0 \rightarrow x > 0 \quad \rightarrow \quad \text{تابع ها بر مبرابر}$$

$$f(x) \xrightarrow{D} x > 0 \quad g = \sqrt{x^3} \rightarrow \sqrt{x^2 \cdot x} = |x| \sqrt{x} = x \sqrt{x} \checkmark \quad (8)$$

$$g(x) \xrightarrow{D} x - |x| > 0 \rightarrow x > |x| \rightarrow x > 0 \quad D_F = D_g$$

تابع ها بر مبرابر
 $\sqrt{x} > 0 \rightarrow x > 0$ برای $f(x)$ صفری شود و $g(x)$ صفری شود.

$$15 \quad \text{الف)} \quad (1, 3) \rightarrow (3) \quad (9)$$

$$\text{ب)} \rightarrow \frac{1+1}{1-1} \quad \text{دن} \quad \text{ج)} \rightarrow f(0) \times g(-1) = 00$$

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$$\text{الف)} \quad g(1) = f\left(\frac{1}{1}\right) \rightarrow (1, 1) \quad g\left(\frac{1}{4}\right) = f\left(\frac{1}{4}\right) \rightarrow (1, 3) \quad (10)$$

$$g(0) = f\left(\frac{0}{-1}\right) \rightarrow (0, 4) \quad g\left(-\frac{1}{4}\right) = f\left(\frac{1}{4}\right) \rightarrow (-1, 3)$$

$$g\left(\frac{1}{4}\right) = f\left(\frac{1}{4}\right) \rightarrow (1, 3)$$

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ب) $h(n) = P(|n|) \rightarrow |n| = 0, 2, 3 \rightarrow n = 0, 2, 3, -2$ (1.)
 $\rightarrow h(n) = \{(0, 4), (2, 1), (-2, 1), (3, -1), (-3, -1)\}$

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