

19, 175 آنیڻ قوب نوڻه

$$\rightarrow \text{دېر لول} \rightarrow f(a) = (a+1)(a+2) = 2a+2 \quad (1)$$

$$f(a) = 15a+18 \rightarrow -2 \rightarrow f(-2) = 2a+2(-2) = 2a-2$$

$$15a+18 = 2a-2+a \rightarrow 14a = -20 \rightarrow a = -\frac{10}{7} \quad (2)$$

$$(2-\sqrt{3})(2+\sqrt{3}) = 1 \rightarrow z = \sqrt{2-\sqrt{3}} \text{ چو } \sqrt{2+\sqrt{3}} = \frac{1}{z} \quad (2)$$

$$f(2-\sqrt{3}) + f(2+\sqrt{3}) \rightarrow z + \frac{1}{z} + 2 + z + \frac{1}{z} + 2 \rightarrow 2\left(z + \frac{1}{z}\right) + 4$$

$$\left(z + \frac{1}{z}\right)^2 \rightarrow z^2 + \frac{1}{z^2} + 2 \rightarrow \left(\frac{1}{2}2-\sqrt{3}\right) + (2+\sqrt{3}) + 2 = 4$$

$$z + \frac{1}{z} = \sqrt{4} \rightarrow 2 + 2\sqrt{3} \quad (2)$$

$$x \rightarrow -x \left\{ \begin{array}{l} \text{دېر} \Rightarrow 2x^2 f(x) - 2f(-x) = 2x^2 - x \\ 2x - 2f(x) + 2f(-x) = 2x^2 + x \end{array} \right. \quad (3)$$

$$\left. \begin{array}{l} 2f(x) - 4f(-x) = 1x^2 - 2x \\ -4f(x) + 4f(-x) = 12x^2 + 2x \end{array} \right\} \rightarrow 2f(x) = 20x^2 + x$$

$$f(x) = -\frac{1}{2}x^2 - \frac{x}{4} \quad (2)$$

4f

40M

$$(x+y)f(x) - yx f(x+y) = \varepsilon x^y - m x + y m - 1 \quad (4)$$

$$f(0) = ? \quad x+y=0 \rightarrow x=-y \rightarrow x=0 \rightarrow y f(x) - y m - 1$$

$$f(0) = \frac{y m - 1}{y} \rightarrow x = -y \rightarrow y f(0) = 1 y - y m + y - 1$$

$$f(0) = \frac{1}{y} (y f(0)) = \frac{1}{y} m + \frac{1}{y} \rightarrow y \left(\frac{y m - 1}{y} \right) = m + 1$$

$$y m = 1 \wedge \rightarrow m = \frac{1}{\varepsilon} \rightarrow f(0) = \frac{1}{\varepsilon} \left(\frac{1}{\varepsilon} \right) - 1 = \frac{1}{\varepsilon^2} - 1$$

$$f(x) = ax + b \rightarrow f(x) + f\left(\frac{1}{x}\right) = \frac{y x^y - y x + y}{x} \quad (5)$$

$$= \frac{y}{a} x - y + \frac{y}{x} \rightarrow f(x) + f\left(\frac{1}{x}\right) = ax + b + \frac{a}{x} + b = ax + \frac{a}{x} + 2b - y$$

$$\rightarrow a = y \rightarrow y b = -y \rightarrow b = -1 \quad f(x) = yx - 1$$

$$f(1) = y - 1 = 0 \quad (6)$$

$$\sqrt{1-x} \quad y_0 = x \leq 1 \rightarrow Df = (-\infty, 1] \quad (6)$$

$$g(x) = -\sqrt{(1-x)^y} \rightarrow (1-x)^y \quad y_0 \rightarrow 1-x \leq 1 \rightarrow x \geq 0$$

$$x=1 \quad Df = Dg \rightarrow g(x)$$

! solutions بر این!

برای $x=1$ $x=-1$

$$f(x) \rightarrow x \neq 0 \rightarrow [0, +\infty) \quad , \quad x \neq 0 \rightarrow [0, +\infty) \quad (7)$$

~~$g(x)$~~ $\varnothing$

$$f(x) \rightarrow x \neq 0 \rightarrow [0, +\infty) \quad \left\{ \begin{array}{l} g(x) \rightarrow |x| = x \\ |x| - x = 0 \end{array} \right. \quad (8)$$

$$x < 0 \rightarrow |x| = -x \rightarrow x - |x| = x - (-x) = 2x$$

$$x < 0 \rightarrow Dg = [0, +\infty) \xrightarrow{\text{برای}} \quad (9)$$

$$الف) \left(\frac{f+g}{f-g} \right)(1) \Rightarrow f(1)=2, g(1)=1 \rightarrow \frac{2+1}{2-1} = 3 \quad (10)$$

$$ب) \left(\frac{f+g}{f-g} \right)(2) \Rightarrow f(2)=3, g(2)=2 \rightarrow \text{تعریف شد} \quad (11)$$

$$ج) g(-1)=1, f(g(-1))=f(1) \rightarrow 2$$

سوال $f(x) \times g(-1)$ را میخواندند

$$f(x) \times g(-1) = 0 \times 1 = 0$$

$$الف) \quad \begin{array}{l} 2x-1=2 \rightarrow x=1 \rightarrow g(1)=f(2)=1 \\ 2x-1=-1 \rightarrow x=0 \rightarrow g(0)=f(-1)=2 \\ 2x-1=0 \rightarrow x=\frac{1}{2} \rightarrow g\left(\frac{1}{2}\right)=f(0)=\infty \\ 2x-1=-2 \rightarrow x=-\frac{1}{2} \rightarrow g\left(-\frac{1}{2}\right)=f(-2)=2 \\ 2x-1=3 \rightarrow x=\frac{4}{2} \rightarrow g\left(\frac{4}{2}\right)=f(3)=-1 \end{array} \quad (12)$$

$$\left\{ (1, 1), (0, 2), \left(\frac{1}{2}, \infty\right), \left(-\frac{1}{2}, 2\right), \left(\frac{4}{2}, -1\right) \right\}$$

$$ب) f(0)=\infty \quad \left\{ \begin{array}{l} f(2)=1 \rightarrow |2|=|-2|=2 \\ f(2)=-1 \end{array} \right. \quad \left\{ (0, \infty), (2, 1), (-2, 1), (2, -1), (-2, -1) \right\}$$

الف) $\frac{f(1)+g(1)}{f(1)-g(1)} = \frac{2+1}{2-1} = 3$

ب) $\frac{f(2)+g(2)}{f(2)-g(2)} = \frac{3+3}{3-3} = \frac{6}{0}$! تعریف نشده!

پ) $f(-1) \times g(-1) = 0 \times 1 = 0$