

Date _____ Subject _____

$$Df \stackrel{?}{=} Dg \text{ و } f(x) \stackrel{?}{=} g(x) \quad (6)$$

$$\left. \begin{aligned} Df &= 1-x \geq 0 \rightarrow x \leq 1 \\ Dg &= (1-x)^3 \geq 0 \rightarrow x \leq 1 \end{aligned} \right\} Df = Dg$$

$$(x-1)\sqrt{1-x} = \sqrt{(1-x)^2} \sqrt{1-x} = \sqrt{(1-x)^3}$$

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

$$Df = Dg = [0, +\infty) \quad (7)$$

$$f(x) = g(x) \text{ رابطه هائیکه برابر اند پس}$$

$$Df = Dg = [0, +\infty) \quad (8)$$

$$f(x) = g(x) \text{ رابطه هائیکه برابرند پس}$$

$$\text{الف) } \frac{f(1)+g(1)}{f(1)+g(1)} = \frac{1+1}{1+1} = 1 \quad (9)$$

$$\rightarrow \frac{1+3}{1-1} \quad \text{تعریف نشده}$$

$$f(1) = 0 \quad (10)$$

$$\text{الف) } 3x-1=2 \rightarrow x=1 \quad (11)$$

$$3x-1=-1 \rightarrow x=0$$

$$3x-1=0 \rightarrow x=\frac{1}{3}$$

$$3x-1=-2 \rightarrow x=-\frac{1}{3}$$

$$3x-1=3 \rightarrow x=\frac{4}{3}$$

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

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

$$(-2, -1) \text{ غلطی قیاس}$$

$$2f(x) = f(-x) + \alpha \rightarrow 18\alpha + 18 = 6\alpha - 6 \quad (1)$$

$$\rightarrow \alpha = -1/18$$

$$\sqrt{2-\sqrt{3}} + \frac{1}{\sqrt{2-\sqrt{3}}} + \frac{1}{\sqrt{2+\sqrt{3}}} + \frac{1}{\sqrt{2+\sqrt{3}}} \quad (2)$$

$$\Rightarrow \sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}} + 4 = 2\sqrt{6}$$

$$\frac{1}{\sqrt{2-\sqrt{3}}} \times \frac{\sqrt{2+\sqrt{3}}}{\sqrt{2+\sqrt{3}}} = \frac{\sqrt{2+\sqrt{3}}}{1}$$

$$\sqrt{2-\sqrt{3}} + \sqrt{2+\sqrt{3}} = 4 \rightarrow 4^2 = 2 - \sqrt{3} + 2 + \sqrt{3} + 4$$

$$\begin{cases} 2f(x) - 3f(-x) = 4x^2 - x \\ 2f(-x) - 3f(x) = 4x^2 - x \end{cases} \quad (3)$$

$$\Rightarrow \begin{cases} 4f(x) - 6f(-x) = 8x^2 - 2x \\ 6f(-x) - 9f(x) = 12x^2 - 3x \end{cases}$$

$$\rightarrow 2f(x) = 4x^2 - 2x$$

$$\rightarrow f(x) = -2x^2 + x$$

$$\text{if } x=0 \rightarrow 2f(0) = 3m+1 \rightarrow f(0) = \frac{3m+1}{2} \quad (4)$$

$$\text{if } x=-2 \rightarrow 6f(0) = 5m+15 \rightarrow f(0) = \frac{5m+15}{6}$$

$$\rightarrow \frac{3}{2}m + \frac{1}{2} = \frac{5m+15}{6} \rightarrow m = 9$$

$$f(0) = \frac{3}{2}m + \frac{1}{2} \rightarrow f(0) = \frac{13}{2}$$

$$ax+b+\frac{a}{x}+b = \frac{3x^2-12x+13}{x}$$

$$\rightarrow \frac{ax^2+bx+a+bx}{x} = \frac{3x^2-12x+13}{x}$$

$$\text{مطابق ساز } a=3 \text{ و } b=-6 \rightarrow f(x) = 3x-6$$

$$\rightarrow f(-1) = 3(-1)-6 = -9$$