

$$f(x) = 2x + 1$$

$$f(-x) = 2x - 1$$

$$2f(x) = f(-x) + 1 \Rightarrow 4x + 2 = 2x - 1 + 1$$

$$2x = -1 \Rightarrow x = -1/2$$

$$A = \left(\sqrt{2+\sqrt{2}} + \frac{1}{\sqrt{2+\sqrt{2}}} \right)^2 = 2+\sqrt{2} + \frac{1}{2+\sqrt{2}} \times (2+\sqrt{2}) + 2 \Rightarrow A = 6 \Rightarrow A = \pm \sqrt{6}$$

$$B = \left(\sqrt{2-\sqrt{2}} + \frac{1}{\sqrt{2-\sqrt{2}}} \right)^2 = 2-\sqrt{2} + \frac{1}{2-\sqrt{2}} \times (2-\sqrt{2}) + 2 \Rightarrow B = 6 \Rightarrow B = \pm \sqrt{6}$$

$$A+B+C+C \Rightarrow \sqrt{6} + 6 \Rightarrow \text{جواب یابان}$$

$$2 \times 2f(x) - 2f(-x) = 4x^2 - x \Rightarrow 4f(x) - 2f(-x) = 4x^2 - 2x$$

$$2 \times 2f(-x) - 2f(x) = 4x^2 + x \Rightarrow 2f(-x) - 2f(x) = 4x^2 + x$$

$$-2f(x) = 4x^2 + x$$

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

$$\text{If } x=0 \quad 2f(0) = 2m-1 \Rightarrow \text{If } m = \frac{9}{2} \Rightarrow f(0) = \frac{2m}{2}$$

$$\text{If } x=-1 \quad 2f(0) = 10+2m$$

$$\frac{2m-1}{2} = \frac{10+2m}{2} \Rightarrow 2m-1 = 10+2m \Rightarrow 2m = 11 \Rightarrow m = \frac{11}{2}$$

$$\text{If } x=-1 \Rightarrow 2f(-1) = -11 \Rightarrow f(-1) = -9$$

$$2 \Rightarrow ax+b + \frac{a}{x} + b$$

$$\frac{ax^2+2bx+a}{x} = \frac{cx^2-12x+12}{x} \Rightarrow a=2 \Rightarrow 2x-5$$

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

$$(x-1)\sqrt{1-x}$$

در تابع با هم برابرند

$$D_f = 1-x \geq 0 \Rightarrow x \leq 1 \quad \checkmark$$

$$-\sqrt{(1-x)^3} \Rightarrow -\sqrt{(1-x)^2(1-x)} \Rightarrow x-1\sqrt{x-1} \quad \text{فاصله} \quad \checkmark$$

$$D_f = 1-x \geq 0 \Rightarrow x \leq 1 \quad \checkmark$$

$$f(x) = x\sqrt{x}$$

$$D_f = [0, +\infty) \quad \checkmark$$

در تابع با هم برابرند

$$g(x) = \sqrt{x^3} \Rightarrow |x|\sqrt{x} \quad \checkmark$$

$$D_f = [0, +\infty)$$

$$[\sqrt{x} - [\sqrt{x}]] \rightarrow [0 \leq t < 1] = 0$$

$$D_f = [0, +\infty)$$

در تابع با هم برابرند

$$\sqrt{x-|x|}$$

$$\rightarrow R_f = 0$$

$$D_f = \begin{matrix} \rightarrow \oplus \checkmark \\ \rightarrow \ominus \checkmark \\ \rightarrow \ominus x \end{matrix} [0, +\infty)$$

$$\text{الف) } \left(\frac{f+g}{f-g} \right) (1)$$

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

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

$$\frac{2+2}{2-2} = 0 \Rightarrow \text{نن}$$

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

$$g(x) = f(x-1) \quad (1, 1), (0, 4) \rightarrow (-\frac{1}{2}, 5) \text{ و } (-\frac{1}{2}, 2) \text{ و } (\frac{5}{2}, -1)$$

$$x-1=2 \Rightarrow x=3, \quad x-1=-1 \Rightarrow x=0, \quad x-1=0 \Rightarrow x=1, \quad x-1=-2 \Rightarrow x=-1$$

$$x-1=2 \Rightarrow x=3$$

$$|x|=2$$

$$|x|=-1$$

$$|x|=0$$

$$|x|=-2$$

$$|x|=2 \quad (1, 1) \quad (0, 4)$$

$$x=\pm 2$$

$$0$$

$$x=0$$

$$0$$

$$x=\pm 2$$

$$(1, 1) \quad (0, 4)$$