

$$x(f(a)+1) = \frac{f(a)-f}{f(a)+1} \Rightarrow a = \frac{f}{f(a)+1}$$

$$a = \frac{1}{\sqrt{2}} + b = \frac{1}{\sqrt{2}} \Rightarrow f(a) + f(b) = \sqrt{a} + \sqrt{b} + \frac{1}{\sqrt{a}} + \frac{1}{\sqrt{b}} + 2 = 2(\sqrt{a} + \sqrt{b}) + 2$$

$$(\sqrt{a} + \sqrt{b})^2 = a + b + 2\sqrt{ab} = 1 + 2 = 3 \Rightarrow 2(\sqrt{3}) + 2 = 2 + 2\sqrt{3}$$

$$f(a) - f(-a) = \frac{a^2}{2} - \frac{a}{2} \quad \times 2 \rightarrow 2f(a) - 2f(-a) = a^2 - a$$

$$-f(a) + 2f(-a) = \frac{a^2}{2} + \frac{a}{2} \quad \times 2 \rightarrow -2f(a) + 4f(-a) = a^2 + a$$

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

$$f(0) = \frac{0^2}{2} + 1 \rightarrow a = 1 \rightarrow 9m - 4 = 0 \Rightarrow m = \frac{4}{9} \Rightarrow f(0) = \frac{4}{9}$$

$$f(0) = \frac{0^2}{2} - 1 \rightarrow a = -1$$

$$a + \frac{a}{2} + 2b = \frac{a^2}{2} - 1 + \frac{a}{2} \Rightarrow a = 1, b = -1 \Rightarrow f(a) = \frac{1}{2} - \frac{1}{2} = 0$$

$$f(a) + f(\frac{1}{a}) \quad f(-1) = -\frac{1}{2} - \frac{1}{2} = -1$$

$$D_g \cdot P_A = (1, 1] \quad D_A = D_g = -(1-x)^{\frac{1}{2}} \rightarrow \text{برابرند}$$

$$D_A = D_g = R^+ \cup \{0\} \rightarrow \text{برابرند}$$

$$\left. \begin{aligned} 0 \leq \sqrt{x} - [\sqrt{x}] < 1 \rightarrow f(x) = 0 \\ x \geq 0: g(x) = \sqrt{x} - x = 0 \end{aligned} \right\} \Rightarrow f = g$$

$$x < 0: x - |x| = x - (-x) = 2x < 0 \rightarrow \text{ص}$$

$$\text{الف)} \frac{1+x}{x-1} \quad \text{ب)} \frac{x^2+x}{x-x} \rightarrow \text{ص} \quad \text{ج)} 0 = 0$$

$$\text{الف)} g(x) = \left\{ (0, 1), (-1, 0), \left(\frac{1}{2}, \frac{1}{2}\right), \left(\frac{1}{3}, \frac{1}{3}\right), \left(\frac{1}{4}, \frac{1}{4}\right) \right\}$$

$$\text{ب)} h(x) = \left\{ (1, 2), (0, 0), (-1, -1), (-2, -2), (-3, -3) \right\}$$

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

(9

$$\text{ب) } \frac{f(2)+g(2)}{f(2)-g(2)} = \frac{3+3}{3-3} = \frac{6}{0} \text{ تقریباً خنجره!}$$

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