

نام و نام خانوادگی *فیاض*

الف = $f(x) = \sqrt{x|x|} \rightarrow x|x| \geq 0 \quad x \neq 0$
 $g(x) = 1 \rightarrow \partial g = \mathbb{R} \quad \partial f \neq \mathbb{R} \quad X$

$$f_R = \frac{(x+r)(x+1) + x + r}{x^2 + 2x + r} \rightarrow \Delta_0 \rightarrow \partial f \in R$$

$$g(x) = 1 \rightarrow \partial g \in R \quad \checkmark$$

2. $f(x) = \frac{r \sin x - 4 \sin x}{r \sin x - r} \rightarrow r \sin x - r \neq 0$
 $g(x) = r \sin x \quad \text{Def} = \mathbb{R} \rightarrow \sin x \neq \frac{r}{r}$
 $-r \leq r \sin x \leq r \rightarrow \text{Def} = \mathbb{R}$

$$\begin{aligned} f(x) &= \frac{x}{|x|} \rightarrow |x| \neq 0 \quad x \neq 0 \\ g(x) &= \frac{|x|}{x} \rightarrow x \neq 0 \rightarrow \\ f(x) &= g(x) \end{aligned}$$

در باره مسئله محدود و - و + مثال نقی $D_p, D_q \rightarrow$ و $f(x) = \left[\frac{x^2}{x^2+1} \right]$ و $g(x) = [x - [x]]$ (الف)

$f(x) = \frac{1}{[x]}$, $g(x) = \frac{1}{f(x)} = \frac{1}{\frac{1}{[x]}} = [x]$ $\circ$ $\frac{2}{3}$ مثال -

$$f(x) = \frac{1}{\sqrt{x-|x|}} \text{ Def. } f(x) = \frac{1}{\sqrt{|x|-x}}$$

$$\sqrt{x-|x|} > 0 \quad x-|x| > 0 \quad |x|-x > 0 \quad |x| > x \quad \text{Def. } R^{-} \cup \{0\}$$

c) $f(x) = \int_1^x \frac{x^2 - x}{x-1} dx$ $x < 1$ $g(x) = x^2 + x$
 $\quad\quad\quad x=1$ $\sqrt{\text{---}} f = x|x$

$$\begin{aligned} f(x) + g(x) &= x^5 + x + 1 \\ f(x) - g(x) &= x^5 - x + 1 \end{aligned}$$

$$f(x) = x^2 + 1 \quad g(x) = x \quad \text{تابع متعاقب}$$

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

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

$$f(x) = x^p + 1 \quad g(x) = x$$

$$f^2 - g^2 = (f-g)(f+g)$$

۳ برابر است D_f و D_g

g. $\frac{1}{x} \rightarrow x^{-1} \rightarrow -1$

$$(x^2+1-x)(x^2+1+x) = x^4 + x^2 + 1$$

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

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

$\text{Df } xg = \text{Df } \cap \text{Df } \text{ کے لیے}$
 $(x - \sqrt{x^2 - 5})(x + \sqrt{x^2 - 5}) = x^2 - (x^2 - 5) = 5$

$$y \in \mathbb{R} \quad \mathcal{D} = (-\infty, -1] \cup [1, +\infty)$$

$$g(x) = \frac{x-b}{r_1x^p - r_2x - \omega}, \quad f(x) = \frac{ax+r}{x^r - mx + n}$$

am-bn?

$$f(x) \xrightarrow{x^r} \frac{r_0 x + r}{r_0 x^r - r_1 x + r_n}$$

جایگذاری ضرایب

$$\begin{cases} 2a = 1 \rightarrow a = \frac{1}{2} \\ -b = \varepsilon \rightarrow b = -\varepsilon \\ \frac{1}{2}c + \frac{1}{2}m = n \rightarrow \frac{1}{2} \\ -\frac{1}{2}n = \eta \rightarrow \frac{1}{2} \end{cases}$$

$$\left(\frac{1}{4}\right) \times \left(\frac{4}{3}\right) - (-5) \left(\frac{-2}{4}\right) = \frac{1}{3} - 1 = \frac{1-3}{3} = -\frac{2}{3}$$

$$f(x) = g(x) \Rightarrow \text{Bijection}$$

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انتخاب از تابع ۱-۲ به تابع ۱ می بینیم $\Leftarrow$

$$f = \{(-1, 2), (2, 4), (3, 2), (0, 1)\}$$

$$g = \{(1, 4), (2, 6), (-1, 4), (5, 0)\}$$

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$$2g \rightarrow \{(1, 8), (2, 12), (-1, -1), (5, 0)\}$$

$$f+g \rightarrow \{(-1, -2), (2, 10), (3, 2)\} \rightsquigarrow \{(2, 1), (-1, 4), (3, 2)\}$$

$$R_{\frac{2\pi}{3}} = \{1, 2, 3\}$$

$$f = \{(1, a), (-3, a-2b), (c, d), (4, d)\}$$

$$g = \{(1, -1), (-3, 1), (a-3b, d)\}$$

$$c = a - 3b$$

$$a = d = -1 \quad 3a - 2b = 1$$

با در نظر گرفتن اینها در معادله رسیدن می یابیم

$$a = -1 \quad d = -1 \quad c = d \quad b = -2$$

$$d + c = -1 + d \quad (1)$$

$$d + c = -1 + d \quad (4)$$

$$b = 0 \rightsquigarrow 1 - fm = 0 \rightarrow -fm = -1 \quad fm = 1 \quad \boxed{m = \frac{1}{f}}$$

$$a = \frac{1}{f} \rightarrow a + b = \frac{1}{f} + 0 = \left(\frac{1}{f}\right)$$

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$$f(x) = \frac{2x+a}{x^2+4x+b}, \quad g(x) = \frac{2}{x-c}$$

از طریق کسرها - کسری می بینیم

$$(2x+a)(x-c) = 2x^2 - 2cx + ax - ac = 2x^2 + (a-2c)x - ac = 2(x^2+4x+b)$$

$$\Rightarrow 2x^2 + 12x + 2b =$$

$$\rightarrow a - 2c = 12 \quad \boxed{12 + 2c = a}$$

$$\Rightarrow -ac = 2b \quad b = -\frac{ac}{2} \Rightarrow b = -c - 4c \quad x = 2(-3) + 12 = 6$$

$$x^2 + 4x + b = \left(\frac{a}{2} + x\right)(-c + 2) \Rightarrow \frac{-a}{2} = c \quad \frac{-1}{2}(2c + 12) = c = (c - 3)$$