

دوسرا سلسلہ

بارہ ماہ

$$f(x)$$
 $g(n)$ 
$$\begin{array}{l} \alpha | \alpha | \gg 0 \\ \alpha \gg 0 \end{array}$$

① الف) برابر نیست .  $\neq$

الف)  $f(x) = \sqrt{x|n|}$ ,  $g(x) = x$

ب)  $f(x) = \frac{(x+3)(x+1) + x + 4}{x^2 + 4x + 3}$  ,  $g(x) = 1$   $\left. \begin{matrix} x^2 + 4x + 3 = x^2 + 4x + 3 \\ x^2 + 4x + 3 = x^2 + 4x + 3 \end{matrix} \right\} x \in \mathbb{R}$  = ب) برابر است.

$$\text{ج: } f(x) = \frac{r \sin^2 x - 9 \sin x}{r \sin x - r}, \quad g(x) = r \sin x \leadsto x \in \mathbb{R}$$

$$r \sin x - r \neq 0 \quad \sin x \neq \frac{r}{r} \xrightarrow{\omega} D_f \neq \mathbb{R}$$

$$\frac{r \sin x (r \sin x - r)}{r \sin x - r} = r \sin x \quad \text{ج:}$$

$$= \text{برابر است}$$

د)  $f(x) = \frac{x}{|x|}$ ,  $g(x) = \frac{|x|}{x}$   
 $|x| \neq 0$   
 $x \neq 0$

(2) برابر است

$$\begin{aligned} \text{1) } f(x) &= \frac{1}{[x]}, \quad g(x) = \frac{1}{x[x]} \\ [x] &\neq 0 & [x] &\neq 0 \\ D_f &\subseteq \mathbb{R} \setminus \{0\} & D_g &\subseteq \mathbb{R} \setminus \{0\} \end{aligned}$$

$$\begin{aligned} \text{ع.} ) f(x) &= \frac{1}{\sqrt{x-|x|}} \quad , \quad g(x) = \frac{1}{\sqrt{|x|-x}} \quad \neq \quad \text{بدرستی} \\ D_f &= \emptyset \quad \begin{array}{l} x-|x| > 0 \\ x > |x| \end{array} \quad \begin{array}{l} |x|-x > 0 \\ |x| > x \\ D_g = \mathbb{R}^+ \end{array} \end{aligned}$$

۲)  $f(x) = \begin{cases} \frac{x^2 - 1}{x - 1} & ; x \neq 1 \\ 2 & ; x = 1 \end{cases}$   $g(x) = x^2 + x$

$$f^r(n) - g^r(n) = (f(n) - g(n))(f(n) + g(n))$$

$$(n^r - n + 1)(n^r + n + 1) = n^r + n^r + n^r - n^r - n^r - n + 1 = \boxed{n^r + n^r + 1} \quad (10)$$

$$\left. \begin{array}{l} f(n) - g(n) \\ f(n) + g(n) \end{array} \right\} \quad \begin{array}{l} r f(n) = r n^r + r \\ f(n) = n^r + 1 \end{array} \quad \left( g(n) = n \right)$$

$$x + \sqrt{x^2 - r^2} + x - \sqrt{x^2 - r^2} = x - x\sqrt{x^2 - r^2} + x\sqrt{x^2 - r^2} + \sqrt{x^2 - r^2} \times -\sqrt{x^2 - r^2} = x^2 - x^2 + r^2 = r^2$$

$$\begin{aligned} x^r - r &\geq 0 \\ x^r &\geq r \\ x &\geq r \\ x &\leq -r \end{aligned}$$



