

(دھم B)

17

(طها جفری)

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

ب) $f(x) = \frac{(x^3 + x)(x+1) + x + 1}{x^2 + ax + 1}$, $g(x) = 1$

2) $f(x) = \frac{x \sin^2 x - 4 \sin x}{x \sin x - 4}$, $g(x) = x \sin x$

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

الف $\rightarrow x|x| \geq 0$, $x \geq 0 \rightarrow f(x)$
 $g(x) \rightarrow x \in \mathbb{R}$ X ✓

ب $\rightarrow f(x) = \frac{x^2 + ax + 1}{x^2 + ax + 1} = 1$ ✓✓

2 $\rightarrow \frac{x \sin x (x \sin x - 4)}{x \sin x - 4} = x \sin x$ ✓

د $\rightarrow f(x), g(x) \rightarrow x \in \mathbb{R}$ ✓✓

الف) $f(x) = \left[\frac{x^2}{x^2 + 1} \right]$, $g(x) = [x - [x]]$ - 2

ب) $f(x) = \frac{1}{[2x]}$, $g(x) = \frac{1}{2[x]}$

2) $f(x) = \frac{1}{\sqrt{x - |x|}}$, $g(x) = \frac{1}{\sqrt{|x| - x}}$

د) $f(x) = \begin{cases} \frac{x^3 - x}{x - 1} & ; x \neq 1 \\ x^2 & ; x = 1 \end{cases}$, $g(x) = x^2 + x$

$$c) \rightarrow \left[\frac{n^r}{n^r+1} \right] = [n - [n]] = 0 \quad \checkmark$$

$$b) \rightarrow \frac{1}{[r \times 1/a]} \neq \frac{1}{r \times [0/a]} \quad \times \checkmark$$

$$2) \rightarrow f(n) \rightarrow n - |n| > 0 \quad n > |n|$$

$$g(n) \rightarrow |n| - n > 0 \quad |n| > n$$

$$d) \rightarrow \text{if } n=1 \rightarrow n^r + n = r$$

$$\frac{n^r - n}{n-1} = n^r + n$$

$$n^r - n = (n^r + n)(n-1)$$

$$n^r - n = n^r - n \quad \checkmark \checkmark$$

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

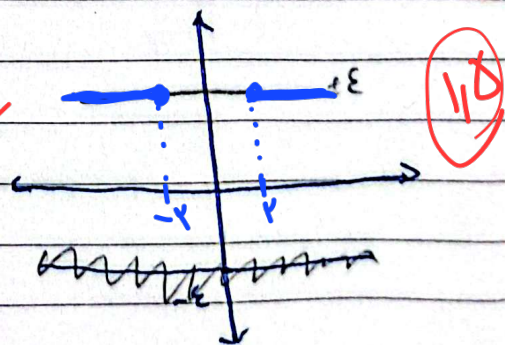
$$f(n) = n^r + 1 \quad \checkmark$$

$$g(n) = n$$

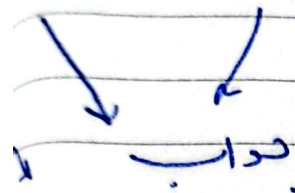
$$f(n) - g(n) = n^r + 1 + r n^r - (n^r) = n^r + n^r + 1 \quad \checkmark$$

$$n^r - (n^r - \varepsilon) = +\varepsilon \quad \checkmark$$

$$D_f, D_g = \mathbb{R} - (-r, r)$$



$$g(n) = \frac{n-b}{(rn+a)(n-1)} = \frac{f(n)}{rx(n^2-mn+n)}$$



$$n-b = \frac{a}{r}n + \frac{r}{r}$$

$$am - bmr$$

$$rn^2 - rmn + rn = rn^2 - rn - d$$

$$\left(\frac{r}{r} \times \frac{r}{r} \right) - \left(-\frac{a}{r} \times -\frac{r}{r} \right)$$

$$\frac{r}{r} - 1 = -\frac{a}{r}$$

$$(m = \frac{r}{r})(n = -\frac{a}{r})$$

$$\frac{bn+r}{an+b} \rightarrow \text{تقسیم$$

$$\frac{b+r}{a+b} = \frac{r}{b}$$

$$b = \pm \epsilon$$

$$a+b=0$$

$$a = -\epsilon$$

$$c = \pm \frac{a}{r}$$

+r

$$\frac{ab}{c} = \frac{\epsilon \times (-\frac{1}{r})}{\frac{1}{r}} = -\epsilon$$

$$\frac{rg}{p+g} = \{ (-1, r) (r, 1) (r, r) \dots ?$$

$$\rightarrow \{$$

$$a = d = -1$$

$$ra - rb = 1 \rightarrow rb = \varepsilon \quad b = r$$

$$a - rb = c \quad 1 - \varepsilon = -a = c$$

$$d + c = -1 + a = \varepsilon$$

~~مطلوب~~

$$\sqrt{-(n - \frac{1}{r})^2}$$

مطلوب

$$a = n = \frac{1}{r}$$

$$b = 0$$

$$\frac{1}{r} + 0 = \frac{1}{r}$$

مطلوب

a

r

r

$$\underline{\quad \quad \quad} \rightarrow n \in \mathbb{R} - \{c\}$$

$$n - c$$

$$rm + a$$

$$(n^r + rn + b) \rightarrow \mathbb{R} - \{c\}$$

$$= (n - c)^r = n^r + c^r - rn c$$

$$-rn c = 4rc \quad c = -r$$

$$c = -12$$

$$\text{if } n=0 \quad \frac{r}{w} = \frac{a}{b}$$

$$\text{if } n=1 \quad \frac{1}{r} = \frac{r+a}{v+b}$$

(r)

$$x + ra = v + b \quad x + ra - v - b = 0$$

$$\begin{cases} rb - wa = 0 \end{cases}$$

$$\begin{cases} xa - rb - y = 0 \end{cases}$$

جواب $\rightarrow a = 7 \rightarrow b = 9$

$$a + b + c = 7 + 9 - 12 = 14$$