

باسم نامہ را بابت مبالغہ کن!

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صورت سوال را بابت دارد کن! کتنا کثیر

مطلوبه اول

۱۵۰

۱۲۵. $f(x) = \sqrt{x \ln x}$ $\rightarrow D_f = [0, +\infty)$ $D_g = \mathbb{R}$ $f \neq g$

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توضیح: این تابع در $x=0$ و $x=1$ تعریف شده است.

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1) $f(x) = (2\sqrt{x})/x$ ~~which is~~ $2/x - \sqrt{x}/x = 2/x - 1/\sqrt{x}$

$g(x) = 1/x$

پیدا کردن

$1 - \sqrt{x}/x$

$f(x) = \begin{cases} 1 & x > 0 \\ -1 & x < 0 \end{cases}$

$g(x) = \begin{cases} 1 & x > 0 \\ -1 & x < 0 \end{cases}$

$f(x) = g(x)$

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$x/x = 1 \quad (x \neq 0)$

$x - x = 0 \Rightarrow 0/x = 0$

$f(x) = |1| = 1$ و $g(x) = |0| = 0$

$Df, Dg = \mathbb{R}$

$f(x) = 1 + \left[\frac{-1}{x^2+1} \right] = 1 - 1 < 0$

$g(x) = [x] - [x] < 0 \rightarrow f(x) < g(x)$

ب) $f(x) = 1/x$ و $g(x) = 1/[x]$

$Df \neq Dg$

$Df = [x] \neq 0 \rightarrow x \notin (0, 1/x)$

$Dg \rightarrow x[x] = 0$
 $x \notin [0, 1]$

ج) $f(x) = \sqrt{x-1}/f(x-1)$ و $g(x) = \sqrt{x-1}/\sqrt{x-1}$

پیدا کردن

پیدا کردن

$Df = \emptyset$

$Dg = (0, +\infty) \rightarrow Df \neq Dg$

$$1) f(x) = x - \sqrt{x/n} g(x) = x - \sqrt{x/n}$$

$$f(x) = \begin{cases} \frac{x^2 - n}{n-1} & x \neq 1 \\ 2 & x = 1 \end{cases}$$

مجموعه کسرها را بنویسید

$$Df = Dg \rightarrow f(1) = 2 \rightarrow f = g$$

سوال سوم

0

$$f(x) = \frac{x-b}{x-a}$$

a, b, m, n اعداد صحیح؟

$$g(x) = \frac{x-a}{x-b}$$

راه حل سوال ۵ به جای سوال ۳ نوشته شده است

$$am = a \times \frac{x-b}{x-a} = \frac{a(x-b)}{x-a}$$

$$bn = b \cdot \frac{x-a}{x-b} = \frac{b(x-a)}{x-b}$$

$$am - bn = \frac{a(x-b)}{x-a} - \frac{b(x-a)}{x-b}$$

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

$$f(x) - g(x) = x^2 - x + 1 \rightarrow f(x) = x^2 + 1$$

$$g(x) = x$$

PARAMOUNT

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

$$a = 2$$

X

$$b = 1$$

X

$$n = 2$$

$$m = 2 - \frac{1}{2-1} = \frac{2}{1} = 2 \Rightarrow am = 2 \times 2 = 4$$

X

$$n = \frac{3-2}{3-1} = \frac{1}{2} \Rightarrow bn = 1 \times \frac{1}{2} = \frac{1}{2}$$

X

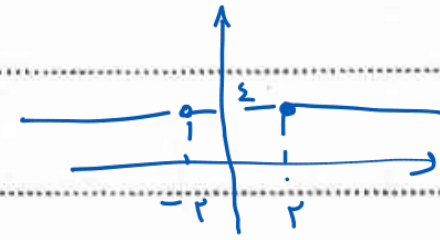
$$am - bn = 4 - \frac{1}{2} = \frac{7}{2}$$

X

$$f(x) - g(x) = 0 \quad f \times g = (x - \sqrt{x^2 - 2})(x + \sqrt{x^2 - 2})$$

$$x^2 - x^2 - (-2) = 2$$

$$f(x) = g(x) \quad \text{for } g(x) = \sqrt{x^2 - 2}$$



$$\sqrt{x+1} \rightarrow x+1 \quad \rightarrow x \geq -1$$

$$f(x) - g(x) + f(x) - x + 1 = 0 \quad f(x) = x$$

$$f(x) = x - \sqrt{x+1} \quad \therefore x \geq -1$$

$$x \geq -1 \text{ is b}$$

$$f\left(x^2 - \frac{p}{r}x - \frac{a}{r}\right) = f\left(x^2 - mx + n\right)$$

$$m = \frac{p}{r}$$

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

$$\rightarrow \begin{cases} an + 2 = n - 5 \\ b = 2 \end{cases}$$

$$a < \frac{1}{r}$$

$$am - bn = -\frac{ev}{r}$$

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

$$f(x) : x \in [0, +\infty)$$

$$x \geq 0$$

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

$$D = g(x) = x \in [0, +\infty)$$

$$D = x \in [0, +\infty)$$

الحل

$$f(x) = \frac{bx+c}{ax+b}$$

$$\frac{bx+c}{ax+b} = c \rightarrow \begin{matrix} b = ac \\ bc = c \end{matrix}$$

$$1c = c \rightarrow c = \pm \frac{1}{r}$$

$$ax+b=0 \Rightarrow x = -b/a \quad c = \frac{1}{r} \rightarrow b = c \quad a = -\frac{1}{r}$$

$$Dg = R - \left\{ -\frac{b}{a} \right\}$$

$$c = -\frac{1}{r} \rightarrow b = -c \quad a = \frac{1}{r}$$

$$\frac{ab}{c} = \pm 2$$

$$-\frac{b}{a} = a$$

$$-b = a^2 \Rightarrow ab = -a^2$$

$$\frac{ab}{c}$$

الحل

$$a \neq 0$$

$$\frac{ab}{c} = -\frac{a^2}{c}$$

الحل

$$h(x) = \frac{f(x)}{f(x) + g(x)}$$

سوال ۲

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

$$x=1 \quad \frac{f}{f+g} = \{(1, -1), (1, 1), (1, 1)\}$$

$$f(1) = -1, g(1) = 1$$

$$h(1) = \frac{1 \times 1}{-1 + 1} = \frac{1}{0}$$

$$x=1 \quad f(1) \quad \text{تعیین نمی شود}$$

$$x=-1 \quad f(-1) \quad \text{تعیین نمی شود} \quad g(-1) = 1$$

$$x=0 \quad f(0) \quad \text{تعیین نمی شود} \quad g(0) = 0$$

$$h = \frac{1}{0}$$

PARAMOUNT

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$$a = d \quad r_b \rightarrow i(d, r), (a, r) \text{ is}$$

$$a = -1 \rightarrow d \rightarrow -1 \rightarrow i(1, r), f(a, r)$$

$$C = a - vb \rightarrow g(a - vb, a), f(C, a)$$

$$g(r, -1), f(r, a - vb)$$

$$r = r_b$$

$$a - vb = 1$$

$$r(-1) - r_b = 1 \rightarrow b = -r$$

$$a - r_b = C \rightarrow C = a$$

$$-r - vb = 1 \rightarrow -vb = r \rightarrow b = -\frac{r}{v}$$

$$C = -1 - v(-\frac{r}{v}) = -1 + r = r$$

$$C + d \rightarrow r + (-1) = 1$$

$$C + d = 1$$

$$d + c = 1 - 1 = 0$$

سوال نمبر 1

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

$$g(x) = \{(a, b)\}$$

$$-x^2 + x - m \geq 0 \Rightarrow -(x^2 - x + m) \geq 0$$

$$f = g$$

$$-x^2 + x - m = 0$$

$$b = 0 \in \mathbb{C}_x$$

$$a^2 - a + m = 0$$

$$a + b \in \mathbb{C}_x \quad b = 0 \Rightarrow a + b = 0$$

$$a^2 - a + m = 0 \quad \cancel{a^2 - a + m = 0}, a + b = a$$

$$\Delta \geq 0 \quad 1 - 4m \geq 0 \Rightarrow m \leq \frac{1}{4}$$

$$f(x) = \sqrt{-(x - \frac{1}{2})^2} \rightarrow a < \frac{1}{2} \rightarrow a + b < \frac{1}{2}$$

سوال رقم 18

$$f(x) = \frac{ax + r}{x^2 + 4x + b}$$

$$g(x) = \frac{r}{x - c}$$

$$x^2 + 4x + b$$

$$\Delta = 0$$

$$4^2 - 4b = 0 \rightarrow b = 4$$

$$\frac{ax + r}{x^2 + 4x + b} = \frac{r}{x - c}$$

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

$$(ax+r)(x-c) = r(x^2 + 4x + b)$$

$$\begin{cases} c = -c \\ a = 4 \end{cases}$$

$$ax - ac + rx - rc = rx^2 + 4rx + rb$$

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

$$a = r$$

$$a + b + c = 12$$

$$a = r \quad c = -a + r = r - r = 0$$

$$rc + r = r \rightarrow rc = 0 \rightarrow c = 0$$

$$-rc = rb \rightarrow 0 = rb \rightarrow b = 0$$

$$a = r$$

$$b = 0$$

$$c = 0$$

$$a + b + c = 4 + 0 + 0 = 4$$