

به دلیل نوشتن اسم نمره شما صفر لحاظ می گردد.

تابع مضاعف آنها

تکافیف شماره ۱

۵

استادی تابع زیر را بررسی کنید

الف) $f(x) = \sqrt{x|x|} = +$ و $g(x) = x$
 $x|x| \geq 0$
 $Df = [0, +\infty)$
 $Dg = \mathbb{R}$

$Df \neq Dg$ ✓
 مساوی نیستند

ب) $f(x) = \frac{(x+3)(x+1)+x+4}{(x+2)(x+3)+1}$ و $g(x) = 1$
 $Dg = \mathbb{R}$

$\Rightarrow Df = \mathbb{R}$ (دو تابع با هم برابر هستند)
 بازنویسی و ساده سازی

$Df = Dg \Rightarrow \frac{(3)(1)+4}{(2)(3)+1} = g(1) = 1$
 دو تابع با هم برابر هستند ✓

ج) $f(x) = \frac{4 \sin^2 x - 9 \sin x}{2 \sin x - 3}$ و $g(x) = 4 \sin x$
 $Df = \mathbb{R}$
 $Dg = \mathbb{R}$

$4 \sin x - 3 = 0$
 $4 \sin x = 3$
 $\sin x = \frac{3}{4}$
 $Df = Dg$

$P(x) = \frac{4 \sin^2 90 - 4 \sin 90}{2 \sin 90 - 3} = \frac{4 - 4}{2 - 3} = 0$
 $g(x) = 4 \sin 90 = 4$
 $g(x) \neq P(x)$

باز هم مساوی هستند پس این دو

تابع مساوی اند ✓

Scbo

ج) $f(x) = \frac{x}{|x|}$, $g(x) = \frac{|x|}{x}$ $\xrightarrow{x=1} \frac{1}{1} = 1$

$Df = \{x \mid x \neq 0\} \Rightarrow Df = \mathbb{R} - \{0\}$ در از این هر دو تابع
با یکدیگر برابر می شوند

$g(x)$ $x \neq 0 \Rightarrow Dg = \mathbb{R} - \{0\}$ ~~صداقت~~ ✓ این دو تابع با هم ✓

۲. برای بررسی توانع زیر بررسی کنید:

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

$x^2+1=0$ هیچ صوت $\Rightarrow Df = \mathbb{R} \setminus \frac{(-1) \pm \sqrt{1-4}}{2} = \mathbb{R} \setminus \{-1, 1\}$
~~صداقت با صدق می شود~~ صداقت ضروری نداریم

$[x - [x]] \Rightarrow Dg = \mathbb{R}$ تابع $f(x)$ و $g(x)$ به
از این با هم برابر نیستند

$f(x) = g(x) = 0 \rightarrow$ با هم برابر اند

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

$Df = \mathbb{R} - \{0, \frac{1}{2}\}$

۱

$Dg = \mathbb{R} - \{0\}$

پس این دو با هم برابر
نیستند ~~راضی~~ ✓ حاشی
پس این نیست

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

$$x-|x| > 0 \quad x > |x|$$

$$|x|-x > 0$$

$$|x| > x$$

D_f تعریف نشده است

$$D_g = (-\infty, 0) \cup (1, \infty)$$

این دو تابع مساوی نیستند

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

$$D_g = \mathbb{R}$$

$$f(x) \big|_{x=1} = 2 = g(x) \big|_{x=1} = 1^2 + 1 = 2$$

$$D_f = D_g = \mathbb{R}$$

$$f(x) = g(x) \quad D_f = \mathbb{R} - \{1\} \neq D_g = \mathbb{R}$$

پس این دو تابع با وجود شرط ۲ مساوی نیستند

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

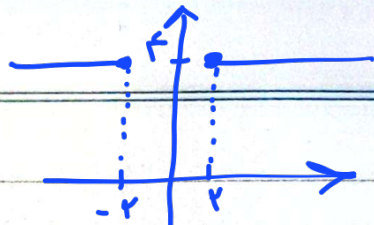
ضابطه های تابع $f^2(x) - g^2(x)$ را مشخص کنید و ضابطه های تابع های

$$f^2(x) = \quad , \quad g^2(x) = \quad , \quad f(x) = x^2 + 1, \quad g(x) = x$$

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

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

$$f \times g = f$$



o (f)

$$m = \frac{r}{r} \quad n = -\frac{r}{r}$$

o (a)

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

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

$$D_g = \mathbb{R} - \{a\} \quad g(x) = c \quad f(x) = \frac{bx+r}{ax+b} \quad \text{عبارت } \frac{bx+r}{ax+b}$$

مباری است حاصل $\frac{ab}{c}$ در مقادیری می تواند باشد؟

$$\frac{bx+r}{ax+b} = c \rightarrow bx+r = acx+bc \rightarrow C = \pm \frac{1}{r}$$

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

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

$$g = \{(r, r), (r, -r), (-r, -r), (-r, r)\}, \quad f = \{(-1, r), (1, r), (3, r), (5, r)\} - V$$

$$f_1 = (-1, r), (1, r), (3, r), (5, r) \quad \text{مباری کنیم} \quad \frac{rg}{f+g}$$

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

(r, 1)

$$\frac{rg}{f+g} = \{(-1, r), (1, 1), (3, r)\}$$

Scanned

1- اگر $\vec{r} = (x, y, z)$ و $\vec{r}' = (x', y', z')$ و $\vec{r}'' = (x'', y'', z'')$ و $\vec{r}''' = (x''', y''', z''')$ و $\vec{r}^{(4)} = (x^{(4)}, y^{(4)}, z^{(4)})$ و $\vec{r}^{(5)} = (x^{(5)}, y^{(5)}, z^{(5)})$ و $\vec{r}^{(6)} = (x^{(6)}, y^{(6)}, z^{(6)})$ و $\vec{r}^{(7)} = (x^{(7)}, y^{(7)}, z^{(7)})$ و $\vec{r}^{(8)} = (x^{(8)}, y^{(8)}, z^{(8)})$ و $\vec{r}^{(9)} = (x^{(9)}, y^{(9)}, z^{(9)})$ و $\vec{r}^{(10)} = (x^{(10)}, y^{(10)}, z^{(10)})$ و $\vec{r}^{(11)} = (x^{(11)}, y^{(11)}, z^{(11)})$ و $\vec{r}^{(12)} = (x^{(12)}, y^{(12)}, z^{(12)})$ و $\vec{r}^{(13)} = (x^{(13)}, y^{(13)}, z^{(13)})$ و $\vec{r}^{(14)} = (x^{(14)}, y^{(14)}, z^{(14)})$ و $\vec{r}^{(15)} = (x^{(15)}, y^{(15)}, z^{(15)})$ و $\vec{r}^{(16)} = (x^{(16)}, y^{(16)}, z^{(16)})$ و $\vec{r}^{(17)} = (x^{(17)}, y^{(17)}, z^{(17)})$ و $\vec{r}^{(18)} = (x^{(18)}, y^{(18)}, z^{(18)})$ و $\vec{r}^{(19)} = (x^{(19)}, y^{(19)}, z^{(19)})$ و $\vec{r}^{(20)} = (x^{(20)}, y^{(20)}, z^{(20)})$ و $\vec{r}^{(21)} = (x^{(21)}, y^{(21)}, z^{(21)})$ و $\vec{r}^{(22)} = (x^{(22)}, y^{(22)}, z^{(22)})$ و $\vec{r}^{(23)} = (x^{(23)}, y^{(23)}, z^{(23)})$ و $\vec{r}^{(24)} = (x^{(24)}, y^{(24)}, z^{(24)})$ و $\vec{r}^{(25)} = (x^{(25)}, y^{(25)}, z^{(25)})$ و $\vec{r}^{(26)} = (x^{(26)}, y^{(26)}, z^{(26)})$ و $\vec{r}^{(27)} = (x^{(27)}, y^{(27)}, z^{(27)})$ و $\vec{r}^{(28)} = (x^{(28)}, y^{(28)}, z^{(28)})$ و $\vec{r}^{(29)} = (x^{(29)}, y^{(29)}, z^{(29)})$ و $\vec{r}^{(30)} = (x^{(30)}, y^{(30)}, z^{(30)})$ و $\vec{r}^{(31)} = (x^{(31)}, y^{(31)}, z^{(31)})$ و $\vec{r}^{(32)} = (x^{(32)}, y^{(32)}, z^{(32)})$ و $\vec{r}^{(33)} = (x^{(33)}, y^{(33)}, z^{(33)})$ و $\vec{r}^{(34)} = (x^{(34)}, y^{(34)}, z^{(34)})$ و $\vec{r}^{(35)} = (x^{(35)}, y^{(35)}, z^{(35)})$ و $\vec{r}^{(36)} = (x^{(36)}, y^{(36)}, z^{(36)})$ و $\vec{r}^{(37)} = (x^{(37)}, y^{(37)}, z^{(37)})$ و $\vec{r}^{(38)} = (x^{(38)}, y^{(38)}, z^{(38)})$ و $\vec{r}^{(39)} = (x^{(39)}, y^{(39)}, z^{(39)})$ و $\vec{r}^{(40)} = (x^{(40)}, y^{(40)}, z^{(40)})$ و $\vec{r}^{(41)} = (x^{(41)}, y^{(41)}, z^{(41)})$ و $\vec{r}^{(42)} = (x^{(42)}, y^{(42)}, z^{(42)})$ و $\vec{r}^{(43)} = (x^{(43)}, y^{(43)}, z^{(43)})$ و $\vec{r}^{(44)} = (x^{(44)}, y^{(44)}, z^{(44)})$ و $\vec{r}^{(45)} = (x^{(45)}, y^{(45)}, z^{(45)})$ و $\vec{r}^{(46)} = (x^{(46)}, y^{(46)}, z^{(46)})$ و $\vec{r}^{(47)} = (x^{(47)}, y^{(47)}, z^{(47)})$ و $\vec{r}^{(48)} = (x^{(48)}, y^{(48)}, z^{(48)})$ و $\vec{r}^{(49)} = (x^{(49)}, y^{(49)}, z^{(49)})$ و $\vec{r}^{(50)} = (x^{(50)}, y^{(50)}, z^{(50)})$ و $\vec{r}^{(51)} = (x^{(51)}, y^{(51)}, z^{(51)})$ و $\vec{r}^{(52)} = (x^{(52)}, y^{(52)}, z^{(52)})$ و $\vec{r}^{(53)} = (x^{(53)}, y^{(53)}, z^{(53)})$ و $\vec{r}^{(54)} = (x^{(54)}, y^{(54)}, z^{(54)})$ و $\vec{r}^{(55)} = (x^{(55)}, y^{(55)}, z^{(55)})$ و $\vec{r}^{(56)} = (x^{(56)}, y^{(56)}, z^{(56)})$ و $\vec{r}^{(57)} = (x^{(57)}, y^{(57)}, z^{(57)})$ و $\vec{r}^{(58)} = (x^{(58)}, y^{(58)}, z^{(58)})$ و $\vec{r}^{(59)} = (x^{(59)}, y^{(59)}, z^{(59)})$ و $\vec{r}^{(60)} = (x^{(60)}, y^{(60)}, z^{(60)})$ و $\vec{r}^{(61)} = (x^{(61)}, y^{(61)}, z^{(61)})$ و $\vec{r}^{(62)} = (x^{(62)}, y^{(62)}, z^{(62)})$ و $\vec{r}^{(63)} = (x^{(63)}, y^{(63)}, z^{(63)})$ و $\vec{r}^{(64)} = (x^{(64)}, y^{(64)}, z^{(64)})$ و $\vec{r}^{(65)} = (x^{(65)}, y^{(65)}, z^{(65)})$ و $\vec{r}^{(66)} = (x^{(66)}, y^{(66)}, z^{(66)})$ و $\vec{r}^{(67)} = (x^{(67)}, y^{(67)}, z^{(67)})$ و $\vec{r}^{(68)} = (x^{(68)}, y^{(68)}, z^{(68)})$ و $\vec{r}^{(69)} = (x^{(69)}, y^{(69)}, z^{(69)})$ و $\vec{r}^{(70)} = (x^{(70)}, y^{(70)}, z^{(70)})$ و $\vec{r}^{(71)} = (x^{(71)}, y^{(71)}, z^{(71)})$ و $\vec{r}^{(72)} = (x^{(72)}, y^{(72)}, z^{(72)})$ و $\vec{r}^{(73)} = (x^{(73)}, y^{(73)}, z^{(73)})$ و $\vec{r}^{(74)} = (x^{(74)}, y^{(74)}, z^{(74)})$ و $\vec{r}^{(75)} = (x^{(75)}, y^{(75)}, z^{(75)})$ و $\vec{r}^{(76)} = (x^{(76)}, y^{(76)}, z^{(76)})$ و $\vec{r}^{(77)} = (x^{(77)}, y^{(77)}, z^{(77)})$ و $\vec{r}^{(78)} = (x^{(78)}, y^{(78)}, z^{(78)})$ و $\vec{r}^{(79)} = (x^{(79)}, y^{(79)}, z^{(79)})$ و $\vec{r}^{(80)} = (x^{(80)}, y^{(80)}, z^{(80)})$ و $\vec{r}^{(81)} = (x^{(81)}, y^{(81)}, z^{(81)})$ و $\vec{r}^{(82)} = (x^{(82)}, y^{(82)}, z^{(82)})$ و $\vec{r}^{(83)} = (x^{(83)}, y^{(83)}, z^{(83)})$ و $\vec{r}^{(84)} = (x^{(84)}, y^{(84)}, z^{(84)})$ و $\vec{r}^{(85)} = (x^{(85)}, y^{(85)}, z^{(85)})$ و $\vec{r}^{(86)} = (x^{(86)}, y^{(86)}, z^{(86)})$ و $\vec{r}^{(87)} = (x^{(87)}, y^{(87)}, z^{(87)})$ و $\vec{r}^{(88)} = (x^{(88)}, y^{(88)}, z^{(88)})$ و $\vec{r}^{(89)} = (x^{(89)}, y^{(89)}, z^{(89)})$ و $\vec{r}^{(90)} = (x^{(90)}, y^{(90)}, z^{(90)})$ و $\vec{r}^{(91)} = (x^{(91)}, y^{(91)}, z^{(91)})$ و $\vec{r}^{(92)} = (x^{(92)}, y^{(92)}, z^{(92)})$ و $\vec{r}^{(93)} = (x^{(93)}, y^{(93)}, z^{(93)})$ و $\vec{r}^{(94)} = (x^{(94)}, y^{(94)}, z^{(94)})$ و $\vec{r}^{(95)} = (x^{(95)}, y^{(95)}, z^{(95)})$ و $\vec{r}^{(96)} = (x^{(96)}, y^{(96)}, z^{(96)})$ و $\vec{r}^{(97)} = (x^{(97)}, y^{(97)}, z^{(97)})$ و $\vec{r}^{(98)} = (x^{(98)}, y^{(98)}, z^{(98)})$ و $\vec{r}^{(99)} = (x^{(99)}, y^{(99)}, z^{(99)})$ و $\vec{r}^{(100)} = (x^{(100)}, y^{(100)}, z^{(100)})$ و $\vec{r}^{(101)} = (x^{(101)}, y^{(101)}, z^{(101)})$ و $\vec{r}^{(102)} = (x^{(102)}, y^{(102)}, z^{(102)})$ و $\vec{r}^{(103)} = (x^{(103)}, y^{(103)}, z^{(103)})$ و $\vec{r}^{(104)} = (x^{(104)}, y^{(104)}, z^{(104)})$ و $\vec{r}^{(105)} = (x^{(105)}, y^{(105)}, z^{(105)})$ و $\vec{r}^{(106)} = (x^{(106)}, y^{(106)}, z^{(106)})$ و $\vec{r}^{(107)} = (x^{(107)}, y^{(107)}, z^{(107)})$ و $\vec{r}^{(108)} = (x^{(108)}, y^{(108)}, z^{(108)})$ و $\vec{r}^{(109)} = (x^{(109)}, y^{(109)}, z^{(109)})$ و $\vec{r}^{(110)} = (x^{(110)}, y^{(110)}, z^{(110)})$ و $\vec{r}^{(111)} = (x^{(111)}, y^{(111)}, z^{(111)})$ و $\vec{r}^{(112)} = (x^{(112)}, y^{(112)}, z^{(112)})$ و $\vec{r}^{(113)} = (x^{(113)}, y^{(113)}, z^{(113)})$ و $\vec{r}^{(114)} = (x^{(114$

(1, -1) = y. ابعام برابر باشند حاصل $d+c$ ابعام یک و دیگر 8

$$(r, -1), (r-1, 1), (a-rb, \Delta)$$

$$(r, a), (-r, ra - rb), (c, d), (r, d)$$

$$c+d=$$

$$= 1 + 3$$

$$\begin{array}{l} a, d = -1 \\ b = -r \end{array} \quad \begin{array}{l} Pa - rh = 1 \\ -r - r(-r) = 1 \end{array} \quad \begin{array}{l} a - rh = c \\ -1 - r(-r) = a \end{array}$$

9. اگر $g(u) = f(a, b)$ ، $f(u) = \sqrt{-u^2 + u - m}$

مشاری باشند حاصل $a+b$ کران است

$$-x^4 + x - m$$

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

$$(x-1)(x+1)$$

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

$$a+b = \frac{1}{r}$$

$$\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

① $m = \frac{1}{\pi}$

$$\frac{-1 \pm \sqrt{1 + 5m}}{2} = 0$$

۱- اگر در تابع $f(x) = \frac{2x+9}{x^2+4x+b}$ و $g(x) = \frac{2}{x-c}$ برابر باشند

پااصل $a+b+c$ را یاب کنید

$9+3$

$$\frac{2x+a}{x^2+4x+b}$$

Arrows pointing from a to the constant term in the numerator, from 4 to the coefficient of x in the denominator, and from b to the constant term in the denominator.

$(x+4)(x+1)$

$(x+4)(x+1)$

$(x+3)(x+3)$

$(x+3)(x+2)$

$$\frac{-4 \pm \sqrt{4^2 - 4b} = 9}{2}$$

$$\frac{2}{x+3}$$

$\sqrt{b^2 - 4ac}$. $\sqrt{4^2 - 4b}$. $b \neq 9$ ①

$$-\frac{4}{2} \pm \frac{3}{2}$$

$b=9$ $c=-3$

$$\frac{2}{-c} = \frac{a}{3} \Rightarrow -ac \pm 9$$

$a=9$

$$\frac{2x+a}{(x+3)(x+3)} =$$

$c \neq 9$

$a+b+c=12$