

نام و نام خانوادگی

کلاس شماره تکلیف

الف) $f(x) = \sqrt{x|x|} \Rightarrow D_f = [0, +\infty)$ و $g(x) = x \Rightarrow D_g = \mathbb{R}$ برابر نیستند

ب) $f(x) = \frac{x^2 + ax + v}{x^2 + ax + v} = 1 \Rightarrow D_f = \mathbb{R}$ و $g(x) = 1 \Rightarrow D_g = \mathbb{R}$ برابرند

ج) $f(x) = \frac{2 \sin x (2 \sin x - 3)}{2 \sin x - 3} = D_f = [1, 1]$ و $g(x) = 2 \sin x \Rightarrow D_g = \mathbb{R}$ برابرند

د) $f(x) = \frac{x}{|x|} \Rightarrow D_f = \mathbb{R} - \{0\}$ و $g(x) = \frac{|x|}{x} \Rightarrow D_g = \mathbb{R} - \{0\} \Rightarrow D_f = D_g$

جمع $= x^2 + x + 1 \Rightarrow a + b$
 تفریق $= x^2 - x + 1 \Rightarrow a - b$

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

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

ی) $(x+1)^2 - (x)^2 \Rightarrow x^2 + 2x + 1 - x^2 = 2x + 1$

الف) $f(x) = 0$, $g(x) = 0$, $D_f = D_g = \mathbb{R}$ برابرند

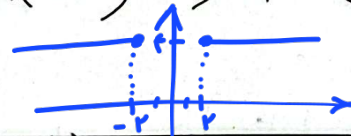
ب) $D_f = \mathbb{R} - [0, \frac{1}{2})$, $D_g = \mathbb{R} - [0, 1)$, $D_f \neq D_g$ برابر نیستند

ج) $D_f = \emptyset$, $D_g = (0, +\infty)$, $D_f \neq D_g$ برابر نیستند

د) $f(1) = 2$, $g(1) = 2 \rightarrow f(x) = g(x) \rightarrow D_f = D_g = \mathbb{R}$ برابرند

$f \times g = (x - \sqrt{x^2 - 4})(x + \sqrt{x^2 - 4}) =$

$x^2 - (\sqrt{x^2 - 4})^2 \Rightarrow x^2 - (x^2 - 4) = x^2 - x^2 + 4 = 4$



$2(-7f) + 5(17) + 71 - 20 = -121 + 85 + 71 - 20 \Rightarrow b = -4$

$am - bm = m(a - b) = \frac{1}{2}(\frac{1}{2} - (-4)) = \frac{1}{2}(\frac{1}{2} + 4) = \frac{1}{2} \times \frac{9}{2} = \frac{9}{4}$

$am - bn = \frac{1}{2}(\frac{1}{2}) - (-4)(-\frac{5}{2}) = -\frac{19}{4}$

$n = -\frac{5}{2}$

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

$$\frac{px + y}{\lambda x + \mu} \Rightarrow \lambda x + \mu \geq 0 \Rightarrow x \geq -\frac{\mu}{\lambda}$$

$$\frac{-\frac{1}{p}x^p}{1} = -r$$

$$g(x) = \frac{1}{p}$$

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

1,5

$$F(x) = (-1, p) (r, \frac{1}{p}) (w, -\frac{1}{p}) (0, \frac{1}{p})$$

$$\frac{pg - (p, A) (r, \frac{1}{p}) (-1, -A)}{p + g (p, A) (r, \frac{1}{p}) (-1, -A)} = r \quad \{(-1, A) (r, 1) (p, p)\}$$

$$f = (p, -1) (-w, 1) (w, w) (p, -1)$$

$$g = (p, -1) (-w, 1) (w, w)$$

$$a = -1$$

$$d = -1$$

$$b = -p$$

$$c = w$$

$$d + c = -1 + w = r$$

2

$$x^p - x + m \leq 0$$

$$x = \frac{1 \pm \sqrt{1 - 4m}}{p} \Rightarrow a = \frac{1 - \sqrt{1 - 4m}}{p}$$

$$b = \frac{1 + \sqrt{1 - 4m}}{p}$$

$$a + b = 1$$

چون دامنه g یک سیم است پس دامنه f باید یک سیم باشد
 $\Delta = 0 \Rightarrow 1 - 4m = 0 \rightarrow m = \frac{1}{4} \quad a = \frac{1}{p} \quad b = 0 \rightarrow a + b = \frac{1}{p}$

$$f(x) = \frac{px + y}{x^p + yx + q} = \frac{p(x + w)}{(x + w)^p} = \frac{p}{x + w}$$

$$g(x) = \frac{p}{x - (-w)} = \frac{p}{x + w} \Rightarrow a + b + c = 1$$

$$a = y$$

$$b = q \quad c = -w$$

3