

شماره ۶

۲. از این من حیث ماک میاز هم دقت

به سرشاری



$f(x) = \sqrt{x+4} \sqrt{x-4}$, $g(x) = \sqrt{x-4} \sqrt{x-4}$, $x \geq 4 \rightarrow x \geq 4$ ✓
 $(f(x) + g(x)) = a + b \sqrt{x+c}$, $\frac{a+b}{c} = ?$

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

$f(x) + g(x) = 2\sqrt{x-4} + 2 - 2 = 2\sqrt{x-4} = a + b\sqrt{x+c}$

$\Rightarrow a=0, b=2, c=-4$

$\frac{a+b}{c} = \frac{0+2}{-4} = -\frac{1}{2}$

$f(x) = \frac{x+2}{x^2-4x+3}$, $g(x) = \frac{(x-1)(x-3)}{x^2-4x+3}$

$g(x) = \left\{ (1,0), (0,0), (2,2), (3,2) \right\}$, $\frac{g}{f} = ?$

$f(2) = -\frac{1}{2}$, $f(3) = \frac{1}{2}$

$\frac{g}{f} = \left\{ (2, -\frac{1}{2}), (3, \frac{1}{2}) \right\}$

$= \left\{ (2, -\frac{1}{2}), (3, \frac{1}{2}) \right\}$

الف) $f(x) = \left\{ (\frac{1}{2}, 2), (\frac{3}{2}, -1), (2, 2), (-\frac{1}{2}, 2) \right\}$

ب) $f(x) = \left\{ (1, 2), (-1, 2), (\sqrt{3}, -1), (-\sqrt{3}, -1), (2, 2), (-2, 2) \right\}$

ج) $2g(x) + 1 = \left\{ (-2, 1), (1, 3), (3, 9), (-1, 1) \right\}$

د) $\frac{f}{g} = \left\{ (1, -4), (-1, \frac{1}{2}), (3, -1) \right\} = \left\{ (1, -4), (3, -1) \right\}$

هـ) $h = 2f + g = \left\{ (2, 2+3), (-2, 0+4), (3, 2+3) \right\} = \left\{ (2, 5), (-2, 4), (3, 5) \right\}$

و) $\left(\frac{f}{g+1} \right) (x)$, $D_f = ?$, $D_{\frac{f}{g+1}} = D_f \cap D_{g+1} = \{x | g+1 \neq 0\}$

$D_f = \left\{ \begin{array}{l} 1) \sqrt{3}x \rightarrow x \geq 0 \\ 2) \sqrt{3x-x} \geq 0 \Rightarrow \sqrt{3x-x} \geq 0 \Rightarrow \sqrt{3x-x} \geq 0 \Rightarrow 3x-x \geq 0 \Rightarrow 2x \geq 0 \Rightarrow x \geq 0 \end{array} \right\}$

$D_f = \textcircled{1} \cap \textcircled{5} \cap \textcircled{3} = [0, 3] - \{2\}$

$b_{g+1} = 1R$

$\Sigma x + \Sigma -x$

if $x \in \mathbb{Z} \Rightarrow 0$

if $x \notin \mathbb{Z} \Rightarrow -1$

$\Rightarrow +1 \Rightarrow 0+1=1$

$-1+1=0$

که نتیجه اینکه شود مجموع صفر شود.

$\Rightarrow \left(\frac{D}{2+1} = \{0, 1, 3\} \right)$

$f(x) = \sqrt{5x - x^2 - 4} \rightarrow \sqrt{-(x-5)(x+4)} \rightarrow \sqrt{-(x-1)(x-4)}$

$\frac{1}{-1+4} = \Rightarrow [1, 4]$

از 1 تا 4 از این تابع $f(x)$ را به دست می آوریم $\leftarrow$ $\{1, 2, 3, 4\}$ است و اینها

$f(1) = \sqrt{5-1-4} = 0, f(2) = \sqrt{10-4-4} = \sqrt{2}, f(3) = \sqrt{15-9-4} = 0$

$h(x) = \left\{ \left(1, \frac{0}{1}\right), \left(2, \frac{\sqrt{2}}{2}\right), \left(3, \frac{0}{3}\right) \right\} = \left\{ (1, 0), (2, \frac{\sqrt{2}}{2}), (3, 0) \right\}$

الف) $y = x^3 - 3x^2 + 3x + 1 - 1 \Rightarrow y = (x-1)^3 + 1 \Rightarrow (x-1)^3 = y-1 \Rightarrow \sqrt[3]{y-1} = x-1 \Rightarrow x = \sqrt[3]{y-1} + 1$

$R_f = 1R$

ب) $y = \frac{1}{x^2 - 2x} \Rightarrow yx^2 - 2yx = 1 \Rightarrow yx^2 - 2yx - 1 = 0$

$y \neq 0 \Rightarrow \Delta = b^2 - 4ac, x = \frac{-b \pm \sqrt{\Delta}}{2a} = \frac{2y \pm \sqrt{4y^2 + 4y}}{2y}$

الف) $-\frac{b}{2a} = \frac{2}{-2} = -1 \Rightarrow x = -1 + 1 = 0$

ا) $0 \Rightarrow R_f = [4, +\infty)$

ب) $-\frac{b}{2a} = \frac{2}{-2} = -1 \Rightarrow -9 + 18 + 3 = 12, a < 0$

$R_f = (-\infty, 12]$

ج) $-\frac{b}{2a} = \frac{2}{-2} = -1 \Rightarrow 4 - 4 - 3 = -3 \Rightarrow x = 0 \Rightarrow [-3, +\infty)$

$\Rightarrow R_f = [0, +\infty)$

د) $-\frac{b}{2a} = \frac{2}{-2} = -1 \Rightarrow 18 - 9 = 9, a < 0 \Rightarrow (-\infty, 9]$

$\Rightarrow R_f = [0, 3]$

الف) $\Rightarrow R_f = 1R$

ب) $R_f = 1R$

ج) $[0, +\infty)$

د) $[0, +\infty)$

الف - ١٥) $g = \frac{r_{n+1}}{n+1}$ $R_f = R - \{a\} \Rightarrow R_f = |R - \{r\}|$
 $ad \neq bc \checkmark$

ب) $g = \frac{r_{n+1}}{n+1}$ $\Rightarrow R_f = |R - \{r\}|$
 $ad \neq bc \checkmark$