لیلا ابراهیمی یازدهم C

۱ـ

$f(x) = \left(\frac{1}{2}\right)^{x-2} - 1$ $\qquad f(x+1) = \left(\frac{1}{2}\right)^{x-1} - 1$

$y = \sqrt{x^3 f(x+1)}$ $\qquad x^3(2^{1-x} - 1) \geq 0$ $\qquad 2^{1-x} - 1 = 0 \rightarrow 2^{1-x} = 1$

$x = 0$ $\qquad 1 - x = 0$

$x = 1$

$0 \quad 1$

$- \quad + \quad -$ $\qquad D_y = [0, 1]$

۲ـ

$f(x) = \sqrt{x + |x+2|}$ $\qquad f(-x) = \sqrt{-x + |-x+2|}$ $\rightarrow x = 2$

2

$-x - x + 2 \quad | \quad -x + x - 2$

$-2x + 2 \qquad -2$

زیر رادیکال ×

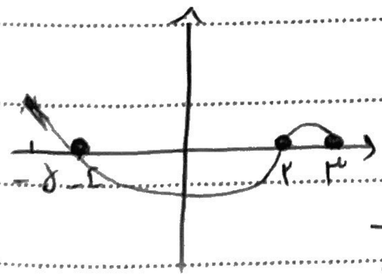
$-2x + 2 \geq 0$ $\qquad 1$

$2(-x+1) \geq 0$ $\qquad + \quad -$

$x = 1$

$D_f = (-\infty, 1]$

۳ـ



$y = \sqrt{\frac{x-1}{f(x)}} \rightarrow x = 1$

$f(x) \rightarrow x = 2, 3, -4$

$-4 \quad 1 \quad 2 \quad 3$

$- \quad + \quad - \quad + \quad -$ $\qquad D_y = [-4, 1] \cup (2, 3)$

$D_{y_1} = D_{y_2}$

$y_1 = \frac{1}{4x^4 - 7x^2 - 4x - 3}$

$y_2 = \frac{1}{3x^2 + ax + b}$

$(3x^2-1)^2 - (x+2)^2 \neq 0 \rightarrow 3x^2 - 1 = x + 2$

$3x^2 - x - 3 = 0$

$3x^2 - x - 3 = 3x^2 + ax + b \longrightarrow \sqrt{-(a+b)} = \sqrt{-(-1-3)} = \sqrt{4} = 2$

$f(x) = x^3 + x \qquad y = \sqrt{x^3 + x - \frac{4x}{x^2} - \frac{3}{x}} \qquad y = \sqrt{\frac{1}{x}(x^2-3)(x^2+2x+5)}$

$y = \sqrt{f(x) - f(\frac{3}{x})}$

$(x+2)(x-2)$

$+ \quad 0 \quad - \quad 0 \quad +$

$-2 \qquad 2$

$y = \sqrt{\frac{1}{x^2}(x^2-3)(x^2-4) + \frac{1}{x}(3-x^2)}$

$y = \sqrt{\frac{1}{x^3}(x^2-3)(x^2+2x+3) + \frac{1}{x}(3-x^2)}$

$D_g = [-2, 0) \cup [2, +\infty)$

$y = \sqrt{\frac{1}{x}(x^2-3)(\frac{1}{x^2}(x^2+2x+3)+1)}$

شهریور

۳۱

پنج‌شنبه

۲۵ صفر

THU 22 SEP

۶ـ

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

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

$x^2+x=10 \Rightarrow x=2 \Rightarrow f(10) = 8-1 = 7$

$f(2) + f(10) = 1+7 = 8$

۸ـ

$f(x) = x^3 - 6x^2 + 12 + 8 - 8 \rightarrow (x-2)^3 + 8$

$g(x) = x^3 + 6x^2 + 12x + 27 - 27 \rightarrow (x+3)^3 - 27$

$\frac{(\sqrt[3]{7} - 3 + 3)^3 - 27}{(\sqrt[3]{2} + 2 - 3)^3 + 8} = \frac{7-27}{2+8} = -2$

$f(x) = \sqrt{x+3-4\sqrt{x-3}} = \sqrt{(x-3-2)^2} = \sqrt{x-3} - 2$

$g(x) = \sqrt{x-3\sqrt{3-x}} = \sqrt{(\sqrt{x-3}-2)^2} = 2 - \sqrt{x-3}$

$\sqrt{x-3} + 2 + 2 - \sqrt{x-3} = 4$

$a = 0$

$b = 2$

$c = -3$

$\frac{-3+0}{4} = -\frac{1}{2}$

Date / / تاریخ

۹- $f(x) = \frac{x+۲}{x^۲-۴x+۳}$ $D_f = R - \{۱, ۳\}$

$x^۲-۴x+۳ \rightarrow (x-۱)(x-۳) \rightarrow x = ۱, ۳$

$g(x) = \{(۲,۱)(۱,۰)(۳,۵)(۰,۴)\}$

$\frac{g}{f} = \{(۲, \frac{۱}{-۴})(۰, \frac{۴}{۳})\} \rightarrow \{(۲, -\frac{۱}{۴})(۰, ۴)\}$

۱۰-

$f(x) = \{(۱,۲)(۳,-۱)(۴,۲)(-۱,۴)\}$

$g(x) = \{(-۲,۳)(۱,-۱)(۲,۲)(-۱,۰)\}$

$f(۲x) = \{(\frac{۱}{۲}, ۲)(\frac{۳}{۲}, -۱)(۲, ۲)(-\frac{۱}{۲}, ۴)\}$

$f(x^۲) = \{(±۱, ۲)(±\sqrt{۳}, -۱)(±۲, ۲)\}$

$۲g^۲(x)+۱ = \{(-۲,۱۹)(۱,۳)(۳,۹)(-۱,۱)\}$

$\frac{۲f}{g} = \{(+۱, -۴)(۳, -۱)\}$