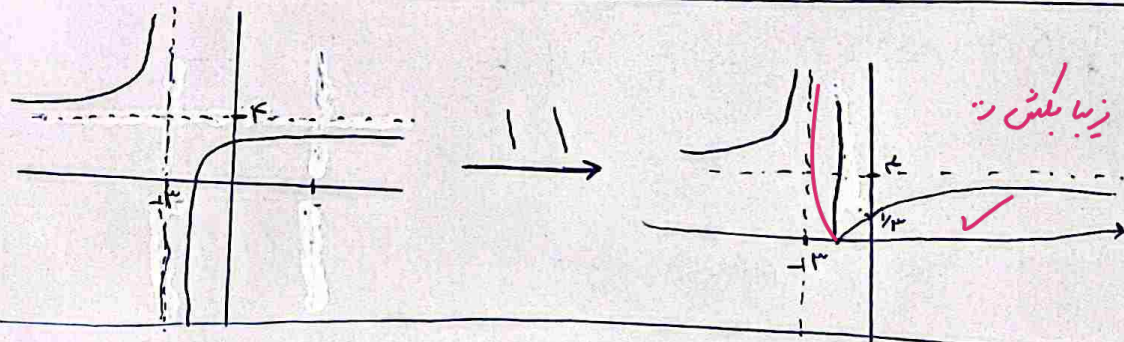
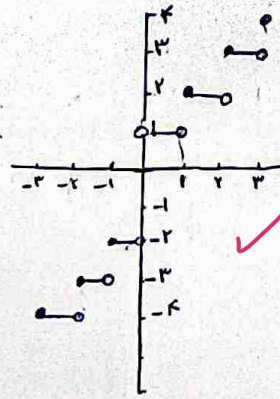


نام و نام خانوادگی: آفرین / ۲۰ / تاریخ: ۶ / کلاس: دوازدهم دخترانه A

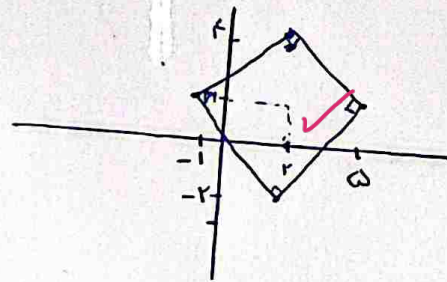
الف) $\sin x \begin{cases} 1 \rightarrow 2-1=1 \\ 0 \rightarrow 2-2=-1 \end{cases} \rightarrow R = [-1, 1]$ ✓

ب) $\cos x \begin{cases} -1 \rightarrow -3-4=-7 \\ 1 \rightarrow 3-4=-1 \end{cases} \rightarrow R = [-7, -1]$ ✓

$-3 \leq x < -2 \rightarrow y = -1-3 = -4$
 $-2 \leq x < -1 \rightarrow y = -1-2 = -3$
 $-1 \leq x < 0 \rightarrow y = -1-1 = -2$
 $0 \leq x < 1 \rightarrow y = 1+0 = 1$
 $1 \leq x < 2 \rightarrow y = 1+1 = 2$
 $2 \leq x < 3 \rightarrow y = 1+2 = 3$
 $x = 3 \rightarrow y = 1+3 = 4$



$y = x + 2$ ✓
 $y = -x + 4$ ✓
 $y = x$ ✓
 $y = x - 4$ ✓



الف) $\sqrt{x + \frac{1}{x}} = \square \rightarrow a\square^2 + b\square + c \rightarrow \square \neq 0$
 $\square = +\infty \rightarrow +\infty$
 $\square = -\frac{b}{2a} = -\frac{r}{r} = -1$
 $\rightarrow R = [2\sqrt{2}, +\infty)$ ✓

ب) $y = -\sin x + 2\sin x + 3 \rightarrow \sin x = \begin{cases} 1 \rightarrow -1+2+3=4 \\ -1 \rightarrow -1-2+3=0 \end{cases} \rightarrow R = [0, 4]$ ✓

$-\frac{b}{2a} = \frac{r}{-r} = -1$

$$f(x) = -\frac{1}{2}x + 10 \rightarrow D = \{1, 2, 3, 4, 5, 6, 7, 8, 9\} \rightarrow R = \left\{ \frac{19}{2}, \frac{17}{2}, \frac{15}{2}, \frac{13}{2}, \frac{11}{2}, \frac{9}{2}, \frac{7}{2}, \frac{5}{2}, \frac{3}{2} \right\}$$

$$f(x) = \left\{ (1, \frac{19}{2}), (2, \frac{17}{2}), (3, \frac{15}{2}), (4, \frac{13}{2}), (5, \frac{11}{2}), (6, \frac{9}{2}), (7, \frac{7}{2}), (8, \frac{5}{2}), (9, \frac{3}{2}) \right\}$$

$$f(x) = \frac{2x+10}{2} = 10.5$$

$$ax^2 + bx + c \rightarrow \text{فقط } a \rightarrow a=0 \rightarrow f(x) = 0 \rightarrow \sqrt{2b+c} = 0$$

$$f(x) = 1 \rightarrow \sqrt{2b+c} = 1 \rightarrow b=1, c=-2$$

$$g(x) = \sqrt{x^2 + 4} \rightarrow R = \sqrt{[4, +\infty)} \rightarrow R = [2, +\infty)$$

$$f(x) = \frac{x(x-1)(x+1)}{x+2} \rightarrow D = \mathbb{R} - \{-2\} \rightarrow x^2 - x \rightarrow x=?, y=1 \rightarrow x^2 - x - 1 = 0$$

$$x = \frac{1 \pm \sqrt{5}}{2} \rightarrow D = \mathbb{R} - \left\{ \frac{1 \pm \sqrt{5}}{2} \right\}$$

$$x^2 - x \rightarrow R = [-1, +\infty) - \{1\} \Rightarrow \frac{a+b}{c} = \frac{1}{-1} = -1$$

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

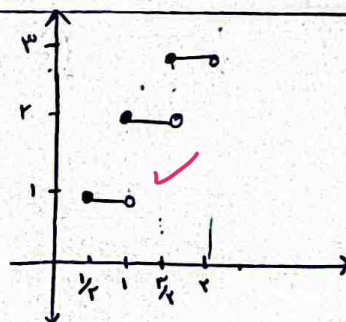
$$\sqrt[3]{(x-2)^3} = x-2 \rightarrow \sqrt{x^3 - 4x^2 + 12x - 8} \rightarrow a = -4, b = 12 \rightarrow D = [-4, 12]$$

$$f(-4) = -4 - 2 = -6, f(12) = 12 - 2 = 10 \rightarrow R = [-6, 10]$$

$$\frac{1}{4} \leq x < 1 \rightarrow [x] = 0, [x + \frac{1}{4}] = 1$$

$$1 \leq x < \frac{5}{4} \rightarrow [x] = 1, [x + \frac{1}{4}] = 1$$

$$\frac{5}{4} \leq x < 2 \rightarrow [x] = 1, [x + \frac{1}{4}] = 2$$



از 3 بار حفظ
کلی شده است: