

19,5

Date

Subject

کتاب ریاضی دوازدهم دفتر B تکلیف 6

1 2

الف) $f(x) = 2 \sin^2(x + \frac{\pi}{4}) - 1$

$0 \leq \sin^2(x + \frac{\pi}{4}) \leq 1 \rightarrow 0 \leq 2 \sin^2(x + \frac{\pi}{4}) \leq 2$

$-1 \leq 2 \sin^2(x + \frac{\pi}{4}) - 1 \leq 1 \rightarrow R = [-1, 1]$

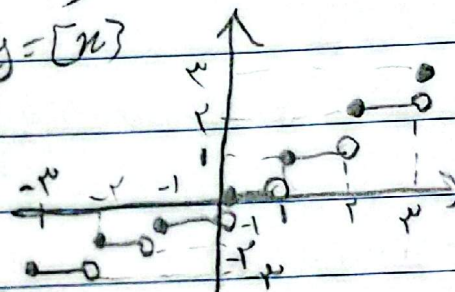
ب) $g(x) = 3 \cos^3 x - 4 \rightarrow -1 \leq \cos^3 x \leq 1 \rightarrow -3 \leq 3 \cos^3 x \leq 3$

$-7 \leq 3 \cos^3 x - 4 \leq -1 \rightarrow R = [-7, -1]$

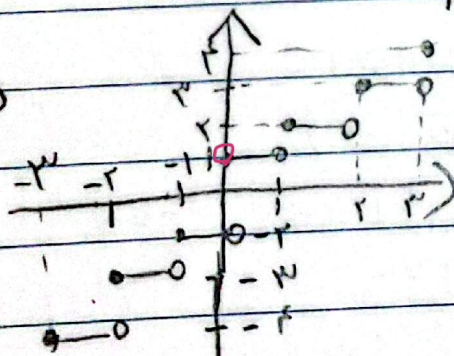
3

$y = \frac{x}{|x|} + [x] \quad [-3, 3]$

$\begin{cases} x > 0 \rightarrow 1 + [x] \\ x < 0 \rightarrow -1 + [x] \end{cases}$



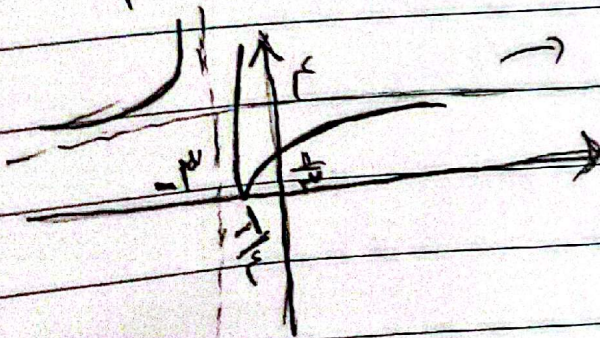
$y = [x] + \frac{x}{|x|}$



صفر تعریف شده است

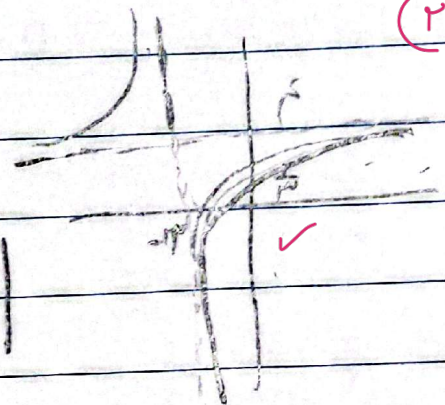
2 3

$y = \left| \frac{x+1}{x+3} \right|$



$\frac{x+1}{x+3}$

$\left| \frac{x+1}{x+3} \right|$

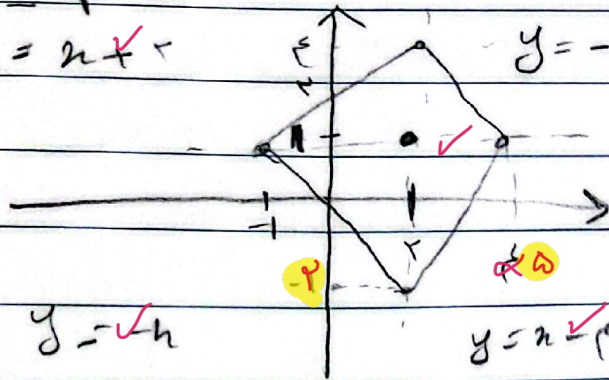


$$|x-2| + |y-1| = 3$$

$$y = x + 2$$

$$y = -x + 5$$

از سه طرف ۳ واحد!!



(۴)

(۱/۵)

(۵)

$$f(x) = x + \frac{1}{x} + 2\sqrt{x + \frac{1}{x}} \rightarrow t = \sqrt{x + \frac{1}{x}}$$

$$t^2 + \frac{1}{t^2} \quad t \geq \sqrt{2}$$

$$\hookrightarrow \frac{-b}{2a} = \frac{-2}{2} = -1 \rightarrow \text{تو در این حالت پس منفی تر از منفی باشد}$$

(۲)

$$R = [2 + 2\sqrt{2}, +\infty)$$

$$\hookrightarrow y = (2 - \sin x)(1 + \sin x)$$

$$y = 2 - \sin^2 x + 2\sin x + 2$$

$$\sin x = 1 \rightarrow y = 2$$

$$\sin x = -1 \rightarrow \frac{-b}{2a} = \frac{-2}{2} = -1 \rightarrow 2$$

$$R = [0, 2]$$

$$f(x) = \frac{-1}{x} + 10 \quad D_f = \{x \mid x \in \mathbb{N}, x < 10\}$$

(۶)

(۲)

$$x=1 \rightarrow \frac{-1}{1} + 10 = \frac{9}{1}$$

$$x=2 \rightarrow \frac{-1}{2} + 10 = \frac{19}{2}$$

$$x=3 \rightarrow \frac{-1}{3} + 10 = \frac{29}{3}$$

$$x=9 \rightarrow \frac{-1}{9} + 10 = \frac{89}{9}$$

$$\frac{21 + 2 \times 9}{2} = \frac{39}{2} = 19.5$$

$$f(x) = \sqrt{ax^r + bx + c} \quad [r, +\infty) \Rightarrow a \checkmark = 0 \quad b > 0 \quad (r) \quad (v)$$

$$\sqrt{bx+c} \quad bx+c=0 \quad -bx=c \quad f(x)=1 \Rightarrow bx+c=1$$

$$g(x) = \sqrt{bx^r + 1x - c} = \sqrt{ax^r + f} \quad [r, +\infty)$$

$$\Rightarrow Rg = [r, +\infty)$$

$$f(x) = \frac{x^r - rx}{x+r} = \frac{x(x-r)(x+r)}{x+r} \quad R = \{1, b\}$$

$$\text{if } x = r, y = 1 \Rightarrow a = r, b = -r \quad (x-r)(x+r) = 0 \quad \begin{cases} x=r \\ x=-r \end{cases}$$

$$x^r - rx \rightarrow \frac{-b}{ra} = \frac{r}{r} = 1 \quad 1-r = -1 \Rightarrow R = [-1, +\infty) - \{1\}$$

$$c = -1 \rightarrow f\left(\frac{r-r}{-r}\right) = f(-1) = 1$$

$$y = \sqrt[3]{x^r + ax^r + bx - 1} \quad D = [a, b]$$

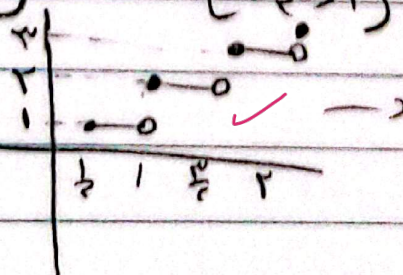
$$\text{given } \rightarrow (x-r)^3 = x^3 - 3x^2r + 1x^2 - 1$$

$$\Rightarrow a = -3, b = 1 \rightarrow y = \sqrt[3]{(x-r)^3} \rightarrow D = [-3, 1]$$

$$\underline{x = -3, y = -1} \quad \underline{x = 1, y = 1} \quad R = [-1, 1]$$

$$y = [x] + \left[x + \frac{1}{r}\right] \quad \left[\frac{1}{r}, r\right]$$

$$\begin{cases} \frac{1}{r} \leq x < 1 \rightarrow 1 \\ 1 \leq x < \frac{r}{r} \rightarrow r \\ \frac{r}{r} \leq x < r \rightarrow r \end{cases}$$



divisible