

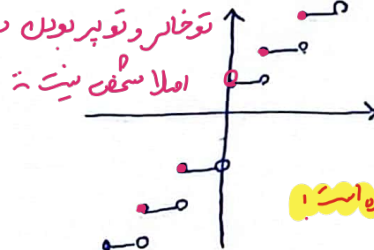
14, 25

سؤال 1
سؤال 2

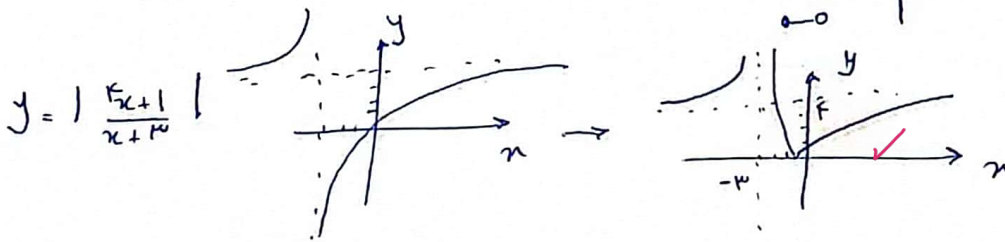
الف) $f(x) = \sqrt{x+1} - 1$ $\xrightarrow{\min} \sqrt{0} - 1 = -1$ $\xrightarrow{\max} \sqrt{1} - 1 = 0$ $R_f = [-1, 0]$

ب) $g(x) = \sqrt{x-1} - 1$ $\xrightarrow{\min} \sqrt{-1} - 1 = -1$ $\xrightarrow{\max} \sqrt{0} - 1 = -1$ $R_g = [-1, -1]$

$y = \frac{x}{|x|} + [x] \rightarrow y = \begin{cases} x < 0 & [x] - 1 \\ x > 0 & [x] + 1 \end{cases}$

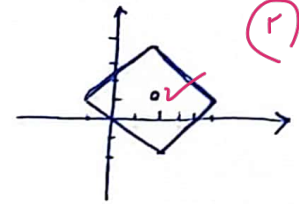


صفر تعریف شده است



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

$x > 2, y > 1 \rightarrow x - 2 + y - 1 = 3$	$y = 4 - x$
$x > 2, y < 1 \rightarrow x - 2 + 1 - y = 3$	$y = x - 4$
$x < 2, y > 1 \rightarrow 2 - x + y - 1 = 3$	$y = x + 2$
$x < 2, y < 1 \rightarrow 2 - x + 1 - y = 3$	$y = -x$



الف) $f(x) = x + \frac{1}{x} + \sqrt{x + \frac{1}{x}} = (\sqrt{x + \frac{1}{x}} + 1)^2 - 1 \rightarrow x + \frac{1}{x} \rightarrow R_f = (-\infty, -2] \cup [2, +\infty)$

$(\sqrt{x+1})^2 - 1 = x + 2 \rightarrow R_f = [2, +\infty)$

ب) $y = (3 - \sin x)(1 + \sin x) = 3 + 2\sin x - \sin^2 x \rightarrow \sin x = \frac{-2}{2(-1)} = 1 \rightarrow \begin{cases} 3 + 2 - 1 = 4 \\ 3 + 2(-1) - 1 = 0 \end{cases}$

$R_{f_{\sin}} = [0, 4]$

$D_{f_{\sin}} = \{1, 2, \dots, 9\} \rightarrow \sum = \sum_{i=1}^9 i = 45$ $R_{f_{\sin}} = -\frac{1}{9} \times \{1, 2, \dots, 9\} + 10 \times 9$

هر عدد به 10 ظاهر

$-\frac{1}{9} \times 45 + 10 = 9$

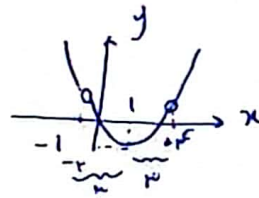
$f(x) = \sqrt{ax^2 + bx + c}$ $\rightarrow \begin{cases} 2b + c = 0 \\ 3b + c = 1 \end{cases}$

$b = 1, c = -2 \rightarrow g(x) = \sqrt{x^2 + 4} \rightarrow R_g = [2, +\infty)$

با مل بنویس!

صفحه آخر...

$$f(x) = \frac{x^2 - 5x}{x+2} = \frac{(x-5)(x+2)}{(x+2)} = x-5$$



$$R_f = [-1, \infty) - \{1\}$$

سوال ۸

(۲)

$$C = -1$$

$$a = -1$$

$$b = 2$$

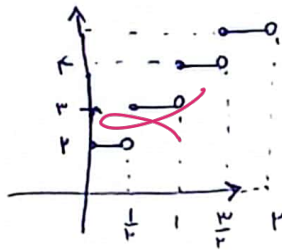
$$f\left(\frac{-2+2}{2(-1)}\right) = f(-1) = (-1)^2 - 2(-1) = 3$$

$$y = \sqrt[3]{x^3 + 6x^2 + 11x - 1} = \sqrt[3]{(x+2)^3} = \sqrt[3]{x^3 + 6x^2 + 11x - 1} \quad a = 6, b = 12$$

سوال ۹ (۲)

$$D_f: [-2, 12] \rightarrow R_f: [-1, 1]$$

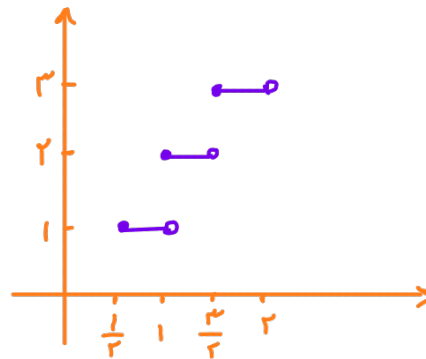
$$f(x) = [x] + \left[x + \frac{1}{x}\right]$$



از ۱ تا ۲، ۱/۲ تا ۱، ۱/۳ تا ۱/۲

سوال ۱۰ (۰)

$$y = \begin{cases} \frac{1}{x} \leq x < 1 \rightarrow y = 0 + 1 = 1 \\ 1 \leq x < \frac{2}{x} \rightarrow y = 1 + 1 = 2 \\ \frac{2}{x} \leq x < 2 \rightarrow y = 1 + 2 = 3 \end{cases}$$



سه پاره خطی

$$D_f = \{1, 2, \dots, 9\} \rightarrow R_f = \left\{\frac{r_1}{r}, \frac{r_2}{r}, \dots, \frac{r_9}{r}\right\}$$

دنباله حسابی

$$S_n = \frac{n}{r} (a_1 + a_n) \Rightarrow S_n = \frac{9}{r} \left(\frac{r_1}{r} + \frac{r_9}{r}\right) = 75$$

-۶

۷- با توجه به دامنه، زیر رادیکال یک خط با شیب مثبت بوده یعنی $a=0$ است و نقطه $(2,0)$ هم در معادله خط صدق میکند...

$$\begin{cases} (2,0) \rightarrow 2b+c=0 \\ (3,1) \rightarrow 3b+c=1 \end{cases} \rightarrow b=1 \text{ و } c=-2$$

$$g(x) = \sqrt{x^2+4} \rightarrow \text{ext} \Big|_4^0 \Rightarrow R_g = \sqrt{[4, +\infty)} = [2, +\infty)$$