

19, 17, 5

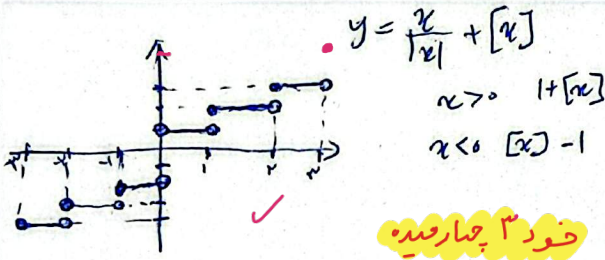
نام و نام خانوادگی تاریخ پاسخنامه تشریحی تکلیف شماره کلاس (20/2/2022) 1402

الف) $2 \begin{bmatrix} 0 & 1 \end{bmatrix} - 1 = \begin{bmatrix} -1 & 0 \end{bmatrix} = R_f$

(2)

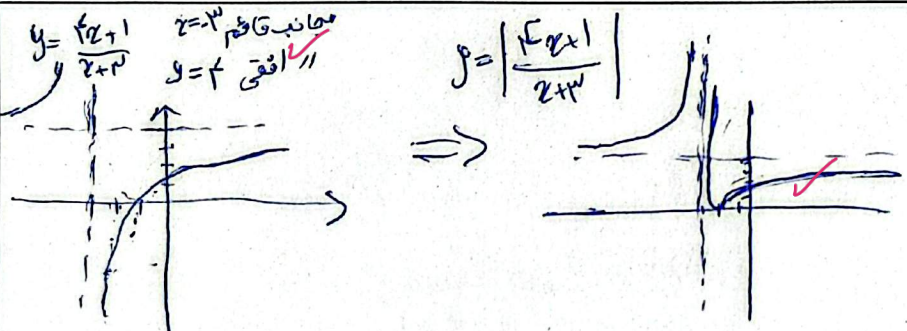
1

ب) $3 \begin{bmatrix} 1 & 0 \end{bmatrix} - 4 = \begin{bmatrix} -1 & 0 \end{bmatrix} = R_g$



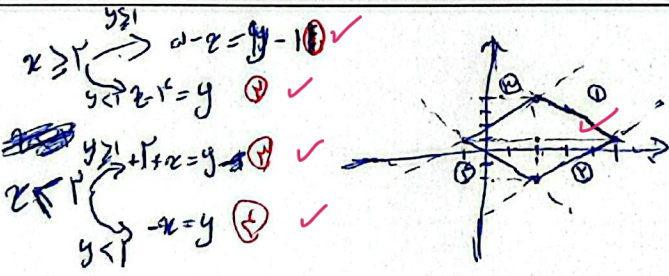
(175)

2



(2)

3



(2)

4

الف) $f(x) = x + 2\sqrt{x}$ $R = [2 + 2\sqrt{2}, \infty)$
 $t = (x + \frac{1}{x})$ $t \geq 2.5$ $2 + 2\sqrt{2}$

(2)

5

ب) $-\sin^2 x + 2\sin x + 3 = -x^2 + 2x + 3$ $R = [0, 4]$
 $t = \sin x \rightarrow [-1, 1]$ $\frac{-b}{2a} = 1$

$$D_f = \{1, 2, 3, \dots, 9\} \quad \sum R = \frac{1}{2} (f_0) + (10 \times 9) = 90 - 10 = \underline{80}$$

$$\frac{(h+1)h}{2}$$

(2)

6

چون یک بازه است پس تابع آنرا در کمال خطی است و

$$\begin{cases} f(1) = 1 \\ f(2) = 0 \end{cases} \quad \begin{cases} 3b + c = 1 \\ 2b + c = 0 \end{cases} \quad \begin{cases} b = 1 \\ c = -2 \end{cases}$$

(2)

7

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

$$D_g = R_{[2, \infty)}$$

$$1 = \frac{x(x-1)(x+1)}{x+1} \rightarrow x^2 - x - 1 = 0 \quad 1 \pm \sqrt{5} \rightarrow \frac{-1 \pm \sqrt{5}}{2}$$

$$\begin{cases} a = -1 \\ b = 1 \end{cases}$$

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

(2)

8

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

$$L = \min_y = \left| \frac{dy}{dx} \right| = \underline{1}$$

$$y = \int_0^x (x-1)^3 dx = x-1 \xrightarrow{\text{محدوده تعریف}} R_f = [1, 10]$$

$$D_y = [2, 12]$$

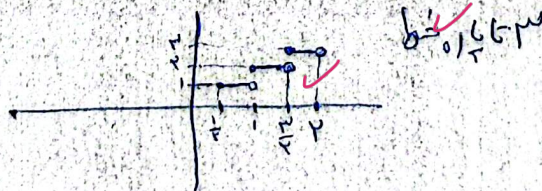
$$x^3 - 4x^2 + 12x - 1$$

$$\begin{cases} a = -1 \\ b = 4 \end{cases}$$

(2)

9

$$\begin{aligned} \left[\frac{1}{2}, 1\right) &\rightarrow 0+1=1 \\ \left[1, \frac{3}{2}\right) &\rightarrow 1+1=2 \\ \left[\frac{3}{2}, 2\right) &\rightarrow 1+2=3 \end{aligned}$$



(2)

10