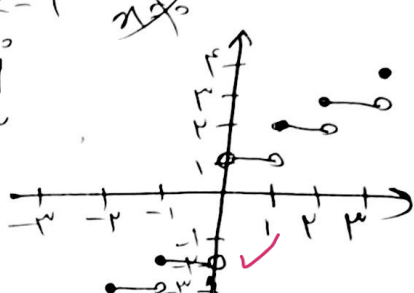
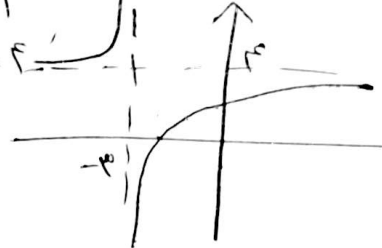
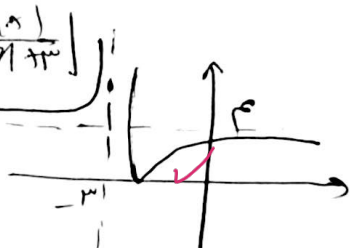
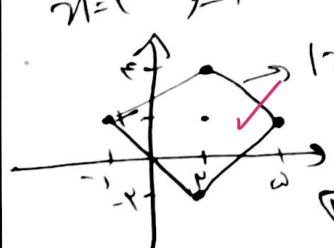
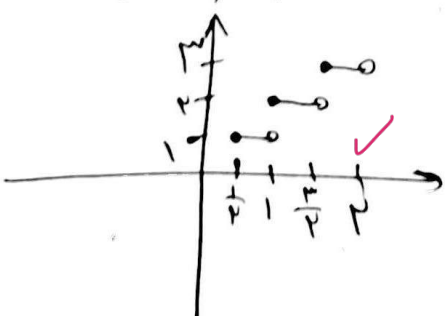


نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۹ کلاس: B. و از دستم	نام و نام خانوادگی: پاسخنامه تشریحی تکلیف شماره ۹ کلاس: B. و از دستم
الف) $\sin^2 x = 0$ $\sin^2 x = 1$ $2x - 1 = -1$ $2x - 1 = 1$ $R_f = [-1, 1]$	ب) $\cos^2 x = -1$ $\cos^2 x = 1$ $3x - 1 = -1$ $3x - 1 = 1$ $R_g = [-1, 1]$
$\frac{x}{ x } = \begin{cases} -1 & x < 0 \\ 1 & x > 0 \end{cases}$ $y = \begin{cases} -x & -3 \leq x < -1 \\ -x & -1 \leq x < 0 \\ -x & 0 < x < 1 \\ x & 1 \leq x < 2 \\ x & 2 \leq x < 3 \\ x & x = 3 \end{cases}$ $R_f = [-3, 3]$	$y = \begin{cases} -x & -3 \leq x < -1 \\ -x & -1 \leq x < 0 \\ -x & 0 < x < 1 \\ x & 1 \leq x < 2 \\ x & 2 \leq x < 3 \\ x & x = 3 \end{cases}$ 
$\frac{f(x+1)}{x+3} \rightarrow \frac{x}{x+3}$ 	$\frac{f(x+1)}{x+3} \rightarrow \frac{x}{x+3}$ 
$x=2, y=1$ 	$y = x+2, -1 \leq x \leq 2$ $y = -x, -1 \leq x \leq 2$ $y = 4-x, 2 \leq x \leq 4$ $y = x-4, 2 \leq x \leq 4$
الف) $x + \frac{1}{x} = t, t \geq 0$ $x + \frac{1}{x} \leq -2 \leq x + \frac{1}{x} \geq 2$ $\Rightarrow t \geq 2$ $y = t + 2\sqrt{t} \rightarrow y_{\min} = 2 + 2\sqrt{2}$ $R_f = [2 + 2\sqrt{2}, +\infty)$	ب) $-\sin^2 x + 2\sin x + 3 = y$ $x = -1 \rightarrow y = 0$ $x = 1 \rightarrow y = 4$ $x = -\frac{b}{2a} = 1 \rightarrow y = 4$ $R_f = [0, 4]$

$D = \{1, 2, 3, \dots, 9\}$ $f(1) = 1 - \frac{1}{3} = \frac{2}{3}$ $f(2) = \frac{2}{3}$ $\vdots$ $\text{و.ا.م} \rightarrow \frac{2}{3}, \frac{1}{3}, \dots, \frac{1}{3}$ $f(9) = 1$	$S = \frac{1}{3} \left(\frac{2}{3} + \frac{1}{3} \right) = \frac{1}{3}$ (2) 6
$a n^2 + b n + c \rightarrow \begin{cases} 9a + 2b + c = 0 \\ f(2) = 1 \rightarrow 4a + 2b + c = 1 \\ f(3) = 0, f(4) = 1 \Rightarrow f(5) = 2 \Rightarrow 25a + 5b + c = 2 \end{cases}$ $a = -\frac{1}{3}, b = \frac{2}{3}, c = -\frac{1}{3}$ $g(n) = \sqrt{\frac{1}{3} n^2 - \frac{2}{3} n - \frac{1}{3}}$ $-\frac{b}{2a} = \frac{1}{3} \Rightarrow y = -\frac{1}{3} \Rightarrow -1$ $P_g = [-1, +\infty) \rightarrow \sqrt{R_g} = [0, +\infty)$	5 7 صفحه آخر...
$f(n) = \frac{n(n-2)(n+2)}{n+2} = n^2 - 2n = (n-1)^2 - 1$ $C = -1$ $a = -2$ $b = 2$ $f\left(\frac{-2+2}{2-1}\right) = f(0) = \frac{0-0}{0+2} = 0$	8 صفحه آخر...
$n^2 + a n^2 + b n - 1 = (n-2)^2 = n^2 - 4n + 4 - 1 \Rightarrow a = -4, b = 12$ $P_f = [-4, 12]$ $y = \sqrt{(n-2)^2} \Rightarrow y = n-2$ $n = -4 \Rightarrow y = -8$ $n = 12 \Rightarrow y = 10$ $R_f = [-1, 10]$	(2) 9
$\frac{1}{3} \leq n < 1 \Rightarrow y = 1$ $1 \leq n < \frac{2}{3} \Rightarrow y = 2$ $\frac{2}{3} \leq n < 1 \Rightarrow y = 3$ 	(2) 10

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...

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

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

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

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$$x^2 - 2x \neq 8 \rightarrow \begin{cases} x \neq -2 \\ x \neq 4 \end{cases}$$

$y=8$ در برد تابع نیست یعنی:

$$D_f = \mathbb{R} - \{-2, 4\} \quad \text{پس دامنه برابر است با:}$$

$$f(x) = x^2 - 2x \rightarrow \text{ext} \Big|_{-1}^1 \Rightarrow R_f = [-1, +\infty) - \{8\} \quad \text{حالا بیایم سراغ برد!}$$

$$f\left(\frac{a+b}{2c}\right) = f\left(\frac{2}{-2}\right) = f(-1) \rightarrow f(-1) = \textcircled{3}$$