

نام و نام خانوادگی: علی محمد حسینی پاسخنامه تشریحی تکلیف شماره 9 کلاس: دهم B

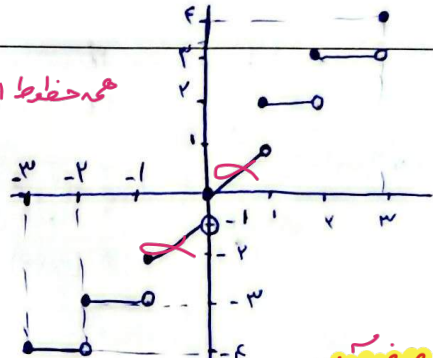
الف) $f(m) = 2 \sin^2(m + \frac{\pi}{3}) - 1 \Rightarrow R_f: 0 \leq \sin^2 m \leq 1 \xrightarrow{+2} 0 \leq 2 \sin^2 m \leq 2 \xrightarrow{-1} -1 \leq 2 \sin^2 m - 1 \leq 1 \Rightarrow R_f = [-1, 1]$

ب) $g(m) = 3 \cos^3 m - 4 \Rightarrow R_g: -1 \leq \cos^3 m \leq 1 \xrightarrow{\times 3} -3 \leq 3 \cos^3 m \leq 3 \xrightarrow{-4} -7 \leq 3 \cos^3 m - 4 \leq -1 \Rightarrow R_g = [-7, -1]$

$y = \frac{a}{|n|} + [-7]$

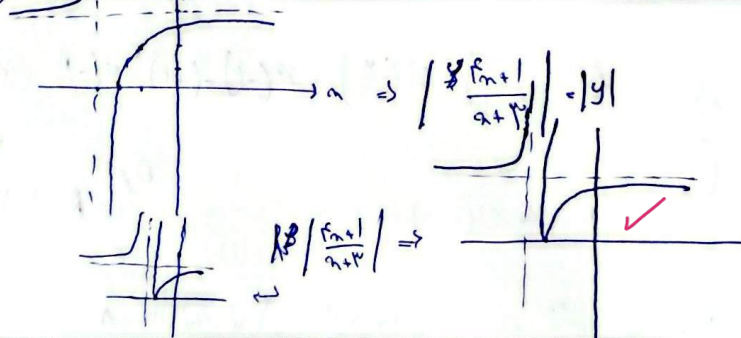
$[-5, 3] \rightarrow [-5, -2] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$
 $[-5, -2] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$
 $[-2, -1] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$
 $[-1, 0] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$
 $[0, 1] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$
 $[1, 2] \rightarrow \frac{2}{|n|} - 3 = -4 \Rightarrow \frac{2}{|n|} = -1 \Rightarrow |n| = -2$

همه خطوط افقی اند!



صفحه آخر...

$y = \frac{f_{n+1}}{n+3} \rightarrow$ مطابق با f است
 عدد فردی

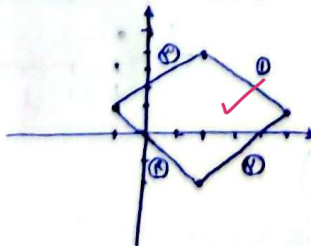


الف) $f(m) = (m + \frac{1}{m}) + \sqrt{m + \frac{1}{m}}$
 چون زیر رادیکال
 مساوی یا مثبت باشد
 $(x_0 + \frac{1}{x_0}) \geq 0$
 $x_0 \in [x_0 + \frac{1}{x_0}]$

$\Rightarrow f_{min} = 2 + 2\sqrt{2} \Rightarrow R_f = [2 + 2\sqrt{2}, +\infty)$

ب) $y = (2 \sin m)(1 + \sin m) = -\sin^2 m + 2 \sin m + 2$
 $\sin m = 1 \rightarrow -(1)^2 + 2(1) + 2 = -1 + 2 + 2 = 3$
 $\sin m = -1 \rightarrow -(-1)^2 + 2(-1) + 2 = -1 - 2 + 2 = -1$
 $\sin m = \frac{b}{a} = \frac{-2}{2(-1)} = \frac{-2}{-2} = 1 \Rightarrow f$
 $\Rightarrow R_f = [-1, 3]$

$|n-2| + |y-1| = 3 \Rightarrow |n-2| \rightarrow n-2, n \geq 2$
 $2-n, n < 2$



$|y-1| \rightarrow y-1, y \geq 1$
 $1-y, y < 1$

سؤال 4
 (2, 1) (2, 4) ① $-2 + 2 - 1 + 1 = 0$
 (2, 1) (2, -2) ② $-2 + 2 - 1 + 1 = 0$
 (5, 1) (-1, 1) ③ $-5 + 5 - 1 + 1 = 0$
 (2, 4) (-1, 1) ④ $-2 + 2 - 1 + 1 = 0$

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$$f(x) = -\frac{1}{x}x + 10$$

$$D_f = \{1, 2, 3, \dots, 9\} \Rightarrow x = 9 \quad \text{نہی} \quad -\frac{1}{x}x + 10 + -\frac{1}{x}x + 10 = -\frac{1}{x}(1+2) + 2 \times 10$$

$$\text{مجموع اعداد} \Rightarrow -\frac{1}{x} (1+2+\dots+9) + 9(10) = -\frac{45}{x} + 90 = -15 + 90 = 75$$

$$f(x) = \sqrt{ax^2 + bx + c} \quad D_f = [x_0, x_1] \quad f(x_0) = 1$$

باید به دقت بین عبارت زیر را در نظر بگیرید و با یک ضریب ۲ ضرب می باشد

$$\begin{aligned} a < 0 \Rightarrow bx + c &\rightarrow bx + c = 0 \\ bx + c &= 1 \Rightarrow b = -2 \Rightarrow f(x) = \sqrt{x-2} \end{aligned}$$

$$g(x) = \sqrt{(1)x^2 + (-2)x - 2} \quad g(x) = \sqrt{x^2 - 2x - 2} \Rightarrow R_g = \sqrt{(x-1)^2 - 3} = [x_0, x_1]$$

$$f(x) = \frac{x^2 - x}{x+2} = \frac{x(x-1)}{x+2} \quad \frac{x(x-1)}{x+2} = \frac{x(x-1)(x+2)}{(x+2)^2} \Rightarrow x^2 - x = (x-1)^2 - 1 \Rightarrow -1 = \text{کمیته می باشد} \Rightarrow c = -1$$

$$R_f = [x_0, x_1] = \{1\} \quad f\left(\frac{-2+1}{2(-1)}\right) = f\left(\frac{1}{-2}\right) = f(-1) = (-1)^2 - 2(-1) = 3$$

$$y = \sqrt{x^2 + ax^2 + bx - 1} \quad \text{باید} \quad \sqrt{(x-2)^2} = \sqrt{x^2 - 4x + 4 - 1} \Rightarrow a = -4, b = 4$$

$$D_f = [a, b] = [-4, 4]$$

$$y = x-2$$

$$R_f \Rightarrow x = -4 \Rightarrow -4 - 2 = -6 \Rightarrow R_f = [-6, 0]$$

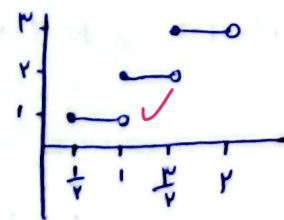
$$y = [x] + [x + \frac{1}{x}] \rightarrow \textcircled{1} \left[\frac{1}{x}, 1\right] \Rightarrow [x] = 0, [x + \frac{1}{x}] = 1 \Rightarrow 0 + 1 = 1$$

$$\text{مثال: } \left[\frac{1}{x}, 2\right]$$

$$\textcircled{2} \left[\frac{1}{x}, \frac{3}{x}\right] \Rightarrow [x] = 1, [x + \frac{1}{x}] = 1 \Rightarrow 1 + 1 = 2$$

$$\textcircled{3} \left[\frac{1}{x}, 2\right] \Rightarrow [x] = 1, [x + \frac{1}{x}] = 2 \Rightarrow 1 + 2 = 3$$

(سپارو خط)



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

$\Rightarrow$

