

۱۹, ۲۵

درس‌های ریاضیات - دوازدهم و سیزدهم

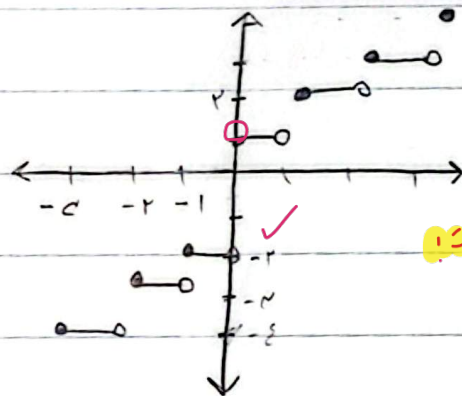
الف) $\sqrt{2} \sin^2 \left(\frac{\pi}{4} + \frac{\pi}{4} \right) - 1 \rightarrow 0 < \sin^2(\alpha) < 1 \rightarrow 0 < \sqrt{2} \sin^2(\alpha) < \sqrt{2}$ (۱۷)

$-1 < \sqrt{2} \sin^2 \alpha - 1 < 1 \rightarrow R_f = [-1, 1]$

ب) $\sqrt{2} \cos^2 \pi - \varepsilon \rightarrow -1 < \cos^2 \pi < 1 \rightarrow -\sqrt{2} < \sqrt{2} \cos^2 \pi < \sqrt{2}$ (۲)

$R_f = [-\sqrt{2}, \sqrt{2}]$ $\leftarrow -\sqrt{2} < \sqrt{2} \cos^2 \pi - \varepsilon < -1$

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

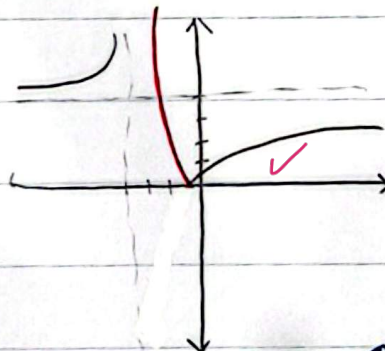


سوال ۲

(۱, ۱۷)

صفحه تعریف شده است

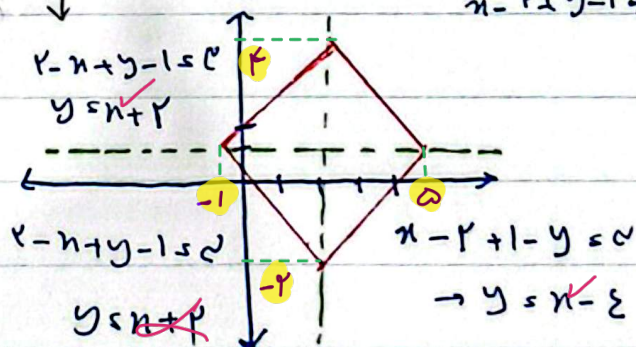
$y = \left| \frac{\varepsilon x + 1}{x + 4} \right|$



سوال ۳

(۲)

$|x-2| + |y-1| = 4$



سوال ۴

(۱, ۵)

صفحه افز...

الف) $f(x) = x + \frac{1}{x} \rightarrow \sqrt{x + \frac{1}{x}} = \left(\sqrt{x + \frac{1}{x}} \right)^2 + 2\sqrt{x + \frac{1}{x}}$ (۱۷)

(۲)

$\sqrt{x + \frac{1}{x}} \rightarrow +\infty$

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

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

$$b) y = (\sqrt{1 - \sin x})(1 + \sin x) = -\sin^2 x + \sqrt{1 - \sin x} + \sqrt{1 - \sin x}$$

$$\sin n \begin{matrix} \nearrow 0 \\ \rightarrow \varepsilon \\ \searrow \varepsilon \end{matrix} \Rightarrow R_f = [0, \varepsilon]$$

$$\text{denominator} = \frac{1}{c} n + 10 \rightarrow \frac{v_1}{c} + \frac{v_1}{c} + \frac{v_2}{c} + \dots + \frac{v_1}{c} = \frac{(v_1 + v_2) \times 9}{c} \quad (4 \text{ marks})$$

$$= v \omega \quad (1)$$

سوال (۷) طبق جدول مقیین علامت تابع درجه ۱ سه بار در a $\rightarrow$ $\frac{y}{-b}$

و ۲ بار در آن.

(۲)
$$\begin{cases} (2b+d=0) - \\ \frac{cb+d \leq 1}{b \leq 1, c \leq -2} \end{cases} \Rightarrow g(\alpha) = \sqrt{x^2 + \xi}$$

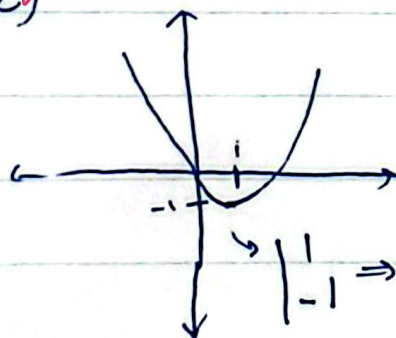
$\hookrightarrow \min_{\xi} \Big|_0^{\infty}$

$$R_g = \sqrt{[L, +\infty)} \subseteq [L, +\infty)$$

$$f(n) = \frac{n^2 - \varepsilon n}{n+r} = \frac{n(n+r)(n-r)}{n+r} \xrightarrow{n \neq -r} n^2 - r n = 1 \rightarrow (n-\varepsilon)(n+r) = 0$$

$$\Rightarrow n = \varepsilon, n = -r$$

$$\{a, b\} = \{-2, 8\}$$



$$f_c - \frac{r+\varepsilon}{-r} \geq f_c - 1 = \underline{\mu}$$

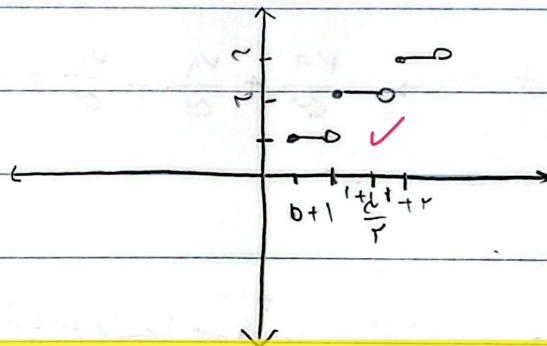
$$\rightarrow \begin{vmatrix} 1 \\ -1 \end{vmatrix} \Rightarrow C_{5-1}$$

$$y = \sqrt[n^r + an^r + bn - 1]{\underbrace{\dots}_{\text{...}}} \sqrt[n - r]{\dots} \quad (r) \text{ (9 د. 2)}$$

$$\sqrt[n^r - 4n^r + 1]{n - 1} \rightarrow a = -4, b = 1 \checkmark \quad -4 < n \leq 1 \checkmark$$

$$-1 \leq n - r < 1 \rightarrow R_f \in [-1, 1]$$

$$y = \lfloor n \rfloor + \lfloor n + \frac{1}{r} \rfloor$$



(r) (1. د. 2)

$$\begin{cases} n \geq r, y \geq 1 \rightarrow y = -n + r \\ n \geq r, y \leq 1 \rightarrow y = n - r \\ n \leq r, y \geq 1 \rightarrow y = n + r \\ n \leq r, y \leq 1 \rightarrow y = -n \end{cases}$$

