

پارسی بی راده، دوازدهم دفتر B
تکلیف شماره ۱۴
۲. انجمن

$$A = (\cos(90^\circ - \alpha), \sin(90^\circ - \alpha)) = (\sin \alpha, \cos \alpha) \quad (1)$$

$$B = (1, \tan(90^\circ - \alpha)) = (1, \cot \alpha) \quad (2)$$

$$\Rightarrow AB = \sqrt{(1 - \sin \alpha)^2 + (\cot \alpha - \cos \alpha)^2}$$

$$\cot \alpha - \cos \alpha = \cos \alpha \left(\frac{1}{\sin \alpha} - 1 \right) = \cos \alpha \left(\frac{1 - \sin \alpha}{\sin \alpha} \right)$$

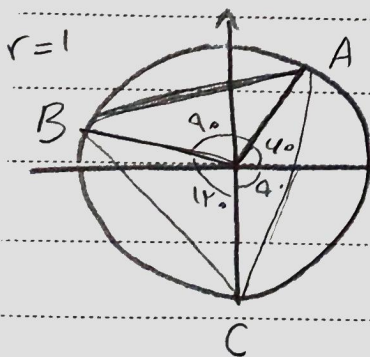
$$AB = |1 - \sin \alpha| \sqrt{1 + \frac{\cos^2 \alpha}{\sin^2 \alpha}} = (1 - \sin \alpha) \times \frac{1}{\sin \alpha}$$

$$\frac{AB}{\sin(90^\circ - \alpha)} = \frac{BO}{\sin \epsilon} = 4\sqrt{2} \Rightarrow \frac{AB}{\sin \alpha} = 4\sqrt{2} \quad (2)$$

$$\frac{AC}{\sin \alpha} = \frac{DC}{\sin 15^\circ} = 4 \rightarrow \frac{AC}{\sin \alpha} = 4 \quad (3)$$

$$\frac{AB}{\sin \alpha} \div \frac{AC}{\sin \alpha} = \frac{4\sqrt{2}}{4} = \sqrt{2} \Rightarrow \frac{AB}{AC} = \sqrt{2}$$

$$A = \left(\frac{1}{\sqrt{2}}, \frac{\sqrt{2}}{\sqrt{2}} \right) \rightarrow A = 45^\circ \quad B = \left(\frac{-\sqrt{2}}{\sqrt{2}}, \frac{1}{\sqrt{2}} \right) \rightarrow B = 135^\circ \quad (4)$$



$$S_{ABO} = \frac{1}{2} \times 1 \times 1 = \frac{1}{2}$$

$$S_{BOC} = \frac{1}{2} \times 1 \times 1 \times \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$

$$S_{AOC} = \frac{1}{2} \times 1 \times 1 \times \frac{1}{\sqrt{2}} = \frac{1}{2\sqrt{2}}$$

$$S_{ABC} = \frac{1 + \sqrt{2}}{2}$$

$$AB = \sqrt{1 + 1 - 0} = \sqrt{2}$$

$$BC = \sqrt{1 + 1 - 2\left(-\frac{1}{\sqrt{2}}\right)} = \sqrt{2}$$

$$AC = \sqrt{1 + 1 - 2\left(-\frac{\sqrt{2}}{\sqrt{2}}\right)} = \sqrt{2 + \sqrt{2}}$$

$$\text{مساحت} = \sqrt{2} + \sqrt{2} + \sqrt{2 + \sqrt{2}}$$

$$S_{ABC} = \frac{1}{r} \times \log_r^r \times \log_r^r \times \frac{1}{r} \quad (E)$$

$$\Rightarrow S = \frac{1}{r} \times r \log_r^r \times r \log_r^r \times \frac{1}{r} = r \log_r^r \times \frac{1}{\log_r^r} = r$$

$$x^r (r x^r - 1) - \sin^r \alpha (r \sin^r \alpha - 1) \quad (D)$$

$$\Rightarrow \cos^r \alpha (r \cos^r \alpha - 1) - \sin^r \alpha (r \sin^r \alpha - 1) = 1$$

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$$\cos^r \alpha (r \cos^r \alpha - 1) + \sin^r \alpha (r \cos^r \alpha - 1) = 1$$

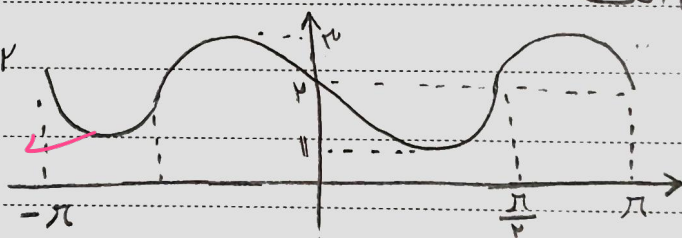
$$(r \cos^r \alpha - 1) (\cos^r \alpha + \sin^r \alpha) = 1 \Rightarrow r \cos^r \alpha - 1 = 1$$

$$r \cos^r \alpha = 2 \quad \sin^r \alpha = 0$$

$$y = -r \sin x \cos x + r$$

$$y = -\sin 2x + r$$

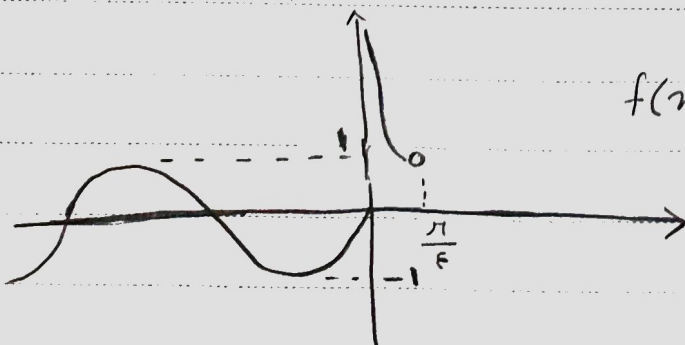
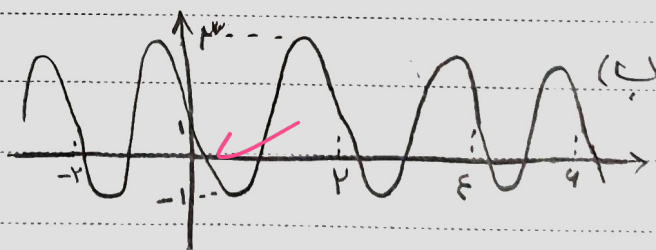
$$T = \frac{2\pi}{r} = \pi$$



$$y = r \cos(\pi x + \frac{\pi}{r}) + 1$$

$$y = r(-\sin \pi x) + 1$$

$$T = \frac{2\pi}{\pi} = 2$$



$$f(x) = \begin{cases} \cot x \rightarrow (1, \infty) \\ \sin x \rightarrow [-1, 1] \end{cases}$$

$$R_f = [-1, +\infty)$$

$$f(x) = a + b \sin(cx) \cos(cx) \cos(\gamma cx) \quad (\wedge)$$

$$f(x) = a + b \left(\frac{1}{\gamma} \sin(\gamma cx) \cos(\gamma cx) \right)$$

$$f(x) = a + b \left(\frac{1}{\varepsilon} \sin(\varepsilon cx) \right)$$

$$f(x) = a + \frac{b}{\varepsilon} (\sin(\varepsilon cx))$$

$$T = \frac{\gamma \pi}{|\varepsilon c|} = \frac{\gamma \pi}{\delta} \Rightarrow |\varepsilon c| = \delta \xrightarrow{c > 0} c = \frac{\delta}{\varepsilon}$$

$$\left. \begin{array}{l} \max = a + \frac{b}{\varepsilon} = \varepsilon \\ \min = a - \frac{b}{\varepsilon} = 0 \end{array} \right\} \begin{array}{l} a = \gamma \quad b = 1 \\ \frac{bc}{a} = \frac{1 \times \frac{\delta}{\varepsilon}}{\gamma} = \delta \end{array}$$

$$T = \frac{\gamma \pi}{|b|} = \pi \Rightarrow |b| = \gamma \rightarrow \text{wir wählen } b = \gamma \quad (9)$$

$$\left. \begin{array}{l} \max = -a + c = \gamma \\ \min = +a + c = -\varepsilon \end{array} \right\} \Rightarrow c = (-1) \quad a = (-\gamma)$$

$$f(x) = -\gamma \cos \gamma x - 1$$

$$f(x) \rightarrow -\gamma \cos \gamma x - 1 = 0 \Rightarrow \cos \gamma x = \frac{-1}{\gamma}$$

$$1 + \tan^2 \gamma x = \frac{1}{\cos^2 \gamma x} \Rightarrow \tan^2 \gamma x = \frac{1}{\cos^2 \gamma x} - 1 = \frac{1}{\gamma^2} - 1 = \frac{1 - \gamma^2}{\gamma^2}$$

$$|\tan \alpha| = \sqrt{\frac{1 - \gamma^2}{\gamma^2}} = \frac{\sqrt{1 - \gamma^2}}{\gamma}$$

$$f(-\gamma \varepsilon / \delta) = f(1 / \delta)$$

$$\text{Wir wählen } z = \frac{-1}{\gamma} \pi + 1$$

$$f(1 / \delta) = \frac{-1}{\gamma} \left(\frac{\gamma}{\gamma} \right) + 1 = \frac{1}{\varepsilon}$$