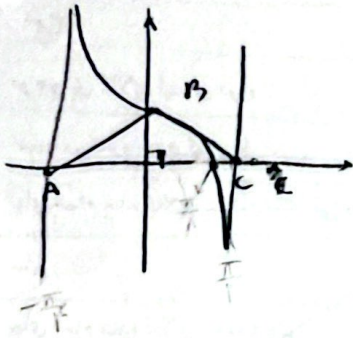




$$T = \frac{\pi}{1-1} = \frac{\pi}{0} \Rightarrow AB = \frac{\pi}{0}$$

①

$$\tan(-\pi/2 + \pi/2) = 1 \Rightarrow B = (0, 1)$$

$$\Delta = \frac{1 \times \pi}{1} = \pi$$

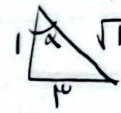
$$\cos \alpha = 1 - \frac{1 + 1 - \sqrt{11}}{1} = \frac{-2 + \sqrt{11}}{1}$$

②

$$\frac{1}{9} - \frac{1}{1} \sin \alpha + \frac{1}{1} (1 - \sin \alpha) = 0$$

$$9 \sin^2 \alpha + 1 \sin \alpha - 2 = 0 \Rightarrow \sin \alpha = \frac{\sqrt{11} + 1}{10} \Rightarrow 1 + \cos \alpha = \frac{1}{\cos \alpha} = \frac{1}{\frac{-2 + \sqrt{11}}{1}} = \frac{1}{-2 + \sqrt{11}}$$

$$= \log(-\cos \alpha) = \log 1 \Rightarrow -\cos \alpha = 1 \Rightarrow \cos \alpha = -1$$



$$\sin \alpha = \frac{1}{\sqrt{2}}, \cos \alpha = -\frac{1}{\sqrt{2}}$$

③

$$\sin \alpha > 0 \Rightarrow \cos \alpha < 0 \Rightarrow \alpha \text{ در ربع دوم}$$

$$\frac{1}{10} + \frac{1}{1}, \frac{1}{1}, \frac{1}{8}$$

④

$$\left. \begin{array}{l} \sin^2 \theta - \sin^2 \theta + 1 = \frac{1}{8} \\ \sin^2 \theta - \sin^2 \theta + 1 = 0 \end{array} \right\} \Rightarrow \sin^2 \theta - \sin^2 \theta + 1 = \frac{1}{8} - 1 = -\frac{7}{8}$$

$$\frac{1}{8} - 1 = 0 \Rightarrow 1 = \frac{1}{8}$$

⑤

$$\left. \begin{array}{l} \frac{\sin \alpha (1 + \cos \alpha)}{1 + \cos \alpha} < 0 \Rightarrow \sin \alpha < 0 \\ \frac{1(\sin^2 \alpha)}{1 + \cos \alpha} > 0 \Rightarrow \sin^2 \alpha > 0 \Rightarrow \sin \alpha \neq 0 \end{array} \right\} \Rightarrow \sin \alpha < 0 \Rightarrow \alpha \text{ در ربع سوم}$$

⑥

$$\frac{1 \cos \alpha + 1 \sin \alpha}{\cos \alpha \sin \alpha} = 0 \Rightarrow 1 \cos \alpha = -1 \sin \alpha \Rightarrow \frac{\sin \alpha}{\cos \alpha} = \frac{1}{-1} = -1$$

$$-\frac{1}{1} + (-\frac{1}{1}) = \frac{-1-1}{1} = \frac{-2}{1} = -2$$

$$\frac{1}{1 + \cos \alpha} = \frac{1}{2} \left(\frac{1 + \cos \alpha}{1 + \cos \alpha} \right)$$

⑧

$$1 \sin \alpha = 1 - \cos \alpha \Rightarrow 1 - \sin \alpha = \cos \alpha$$

⑨

$$\frac{1 + \cos \alpha}{1 - \cos \alpha} = \frac{1 + \cos \alpha}{1 - \cos \alpha}$$

$$1 - \cos \alpha$$

⑩

$$\cos \alpha = \frac{1 + \sin \alpha}{1} = -1 \quad \cos \alpha = \frac{1 + \sin \alpha - \sin \alpha}{1} = 1 - \sin \alpha$$

$$\cos \alpha = \frac{1 + \sin \alpha}{1 - \sin \alpha}$$

$$1 \sin \alpha - \sin \alpha - \cos \alpha = 0 \rightarrow \sin \alpha = \frac{1 + \sqrt{2}}{1} \quad \text{JEE}$$

$$\sin \beta \sin \gamma = \frac{1 + \cos A}{1} \Rightarrow \sin \beta \sin \gamma = 1 + \cos A$$

⑪

$$\Rightarrow \sin \beta \sin \gamma = 1 - \cos \beta \cos \gamma + \sin \beta \sin \gamma \Rightarrow \sin \beta \sin \gamma + \cos \beta \cos \gamma = 1 \Rightarrow \cos(\beta - \gamma) = 1$$

$$A = 180 - \frac{(180 + 180)}{99} = 11^\circ$$

$$\beta - \gamma = 180 \Rightarrow \beta = 180 - \gamma$$