

Analisis ~~...~~ M, 1/2 1/2

$$\cot \alpha = \frac{\cos \alpha}{\sin \alpha} = \frac{\cos \alpha}{|\sin \alpha|} \rightarrow \sin \alpha > 0$$

$$\cot \alpha = \frac{\cos \alpha}{\sqrt{1 - \cos^2 \alpha}}, \quad \frac{1}{\sqrt{\cos^2 \alpha}} = \frac{1}{|\cos \alpha|} = \frac{1 - \sin \alpha}{|\cos \alpha|} \quad (1)$$

$$\cot \alpha > 0$$

$$\frac{1}{|\cos \alpha|} - \frac{1}{\cot \alpha} = \frac{1 - \sin \alpha}{|\cos \alpha|}$$

$$\frac{1}{|\cos \alpha|} - \frac{1 - \sin \alpha}{|\cos \alpha|} = \frac{\sin \alpha}{|\cos \alpha|} = \frac{1}{\cot \alpha} = \frac{\sin \alpha}{\cos \alpha} \rightarrow \cos \alpha > 0$$

$\Rightarrow \sin \alpha > 0, \cos \alpha > 0$ Jalur I

$$\frac{-\pi}{12} < m < \frac{\pi}{12} \quad \sin m = \frac{m-1}{2} \quad (2)$$

$$\frac{-\pi}{4} < m < \frac{\pi}{4}$$

$$\frac{-1}{2} < \sin m < 1$$

$$\frac{-1}{2} < \frac{m-1}{2} < 1$$

$$-1 < m-1 < 2$$

$$-1 < m < 3 \rightarrow m = (-1, 3]$$

$$\tan m + \cot m = -\frac{1}{2}, \quad \frac{\pi}{2} < m < \frac{3\pi}{2} \Rightarrow |\cos m| > |\sin m|$$

$$\frac{\pi}{2} < m < \pi$$

$$\frac{\sin m}{\cos m} + \frac{\cos m}{\sin m} = \frac{\sin^2 m + \cos^2 m}{\sin m \cos m} = \frac{1}{\sin m \cos m} = -\frac{1}{2} \rightarrow \sin m \cos m = -\frac{1}{4}$$

$$\frac{1}{\sin^2 m + \cos^2 m} = \frac{1}{(\sin m + \cos m) \left(\sin^2 m + \cos^2 m - \sin m \cos m \right)}$$



جواب

$$= \frac{1}{\frac{1}{\sqrt{3}}(\sin \alpha + \cos \alpha)} = \frac{1}{\frac{1}{\sqrt{3}} \times \frac{1}{\sqrt{3}}} = -\frac{1}{\sqrt{3}} = \frac{-0.57735}{1}$$

$$(\sin \alpha + \cos \alpha)^2 = 1 + 2 \sin \alpha \cos \alpha = 1 + 2 \times \frac{1}{\sqrt{3}} = 1 + \frac{2}{\sqrt{3}} = \frac{1}{\sqrt{3}}$$

$$|\sin \alpha + \cos \alpha| = \frac{1}{\sqrt{3}} \rightarrow \sin \alpha + \cos \alpha = \frac{1}{\sqrt{3}} \Rightarrow \sin \alpha + \cos \alpha = \frac{1}{\sqrt{3}}$$



$$\cos \theta = \frac{y}{2}$$

$$\cos \theta = \frac{y}{2} = \frac{1}{2}$$

$$h = \sqrt{2^2 - 1^2} = \sqrt{3} = 2$$

$$\text{مساحت} = \frac{(2 + \frac{1}{\sqrt{3}}) \times 2}{2} = \frac{(2 + \frac{1}{\sqrt{3}}) \times 2}{2} = \frac{2}{2} = 1$$

$$\text{مساحت} = 2 + 2 + 2 = 6$$

$$\tan(18^\circ) \times \tan(-18^\circ) - \sin(18^\circ) \cos(18^\circ) = k \cos^2 18^\circ$$

$$-0.31 \times + \tan 18^\circ = \sin 18^\circ \times -\sin 18^\circ = k \cos^2 18^\circ$$

$$-1 + \sin^2 18^\circ = -(1 - \sin^2 18^\circ) = -\cos^2 18^\circ$$

$$k = -1$$

$$A = \sqrt{2} \cos(110^\circ) \sin(225^\circ) - \sqrt{2} \sin(110^\circ) \cos(225^\circ) =$$

$$A = \sqrt{2} \times \frac{-\sqrt{2}}{2} \times -\cos 45^\circ - \sqrt{2} \times \frac{\sqrt{2}}{2} \times -\cos 45^\circ =$$

$$\frac{2}{2} \cos 45^\circ + \cos 45^\circ = \frac{3}{2} \cos 45^\circ$$

$$\frac{A}{\cos 45^\circ} = \frac{\frac{3}{2} \cos 45^\circ}{\cos 45^\circ} = \frac{3}{2}$$

$$f(m) = 14 \cos^2\left(\frac{m}{2}\right) \cos^2(4m) \cos^2\left(\frac{m}{2}\right) \cos^2(8m) \quad (\checkmark)$$

$$f\left(\frac{\pi}{14}\right) =$$

$$= 14 \left(\frac{1 + \cos(4m)}{2}\right) \times \left(\frac{1 + \cos(16m)}{2}\right) \times \frac{1 + \cos(4m)}{2} \times \frac{1 + \cos(8m)}{2}$$

$$= (1 + \cos 4m) (1 + \cos(16m)) (1 + \cos(4m)) (1 + \cos(8m)) =$$

$$f\left(\frac{\pi}{14}\right) = \left(1 + \cos \frac{\pi}{7}\right) \left(1 + \cos \frac{\pi}{7}\right) \left(1 + \cos \frac{2\pi}{7}\right) \left(1 + \cos \frac{2\pi}{7}\right)$$

$$= \left(1 + \frac{\sqrt{7}}{4}\right) \left(1 + \frac{1}{4}\right) \left(1 - \frac{1}{4}\right) \left(1 - \frac{1}{4}\right) = \frac{4 + \sqrt{7}}{4} \times \frac{5}{4} \times \frac{3}{4} \times \frac{3}{4}$$

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

$$\sin \alpha < 0 \quad (\Delta)$$

$$\cos \alpha < 0$$

$$\rightarrow r + r \sin \alpha = 1 - \sin \alpha$$

$$r \sin \alpha = -r \rightarrow \sin \alpha = \frac{-r}{a}$$

$$\cos \alpha = \frac{-r}{a}$$

$$\tan \frac{\alpha}{2} = \frac{1 - \cos \alpha}{\sin \alpha} = \frac{1 + \frac{r}{a}}{\frac{-r}{a}} = \frac{a}{-r} = \frac{-a}{r} = -r$$

$$\frac{\sin \theta}{1 - \cos \theta} + \frac{1 + \cos \theta}{\sin \theta} = \frac{r \sin \frac{\theta}{2} \cos \frac{\theta}{2}}{r \sin^2 \frac{\theta}{2}} + \frac{r \cos^2 \frac{\theta}{2}}{r \sin \frac{\theta}{2} \cos \frac{\theta}{2}} \quad (9)$$

$$= \frac{\cos \frac{\theta}{2}}{\sin \frac{\theta}{2}} + \frac{\cos \frac{\theta}{2}}{\sin \frac{\theta}{2}} = \frac{r \cos \frac{\theta}{2}}{\sin \frac{\theta}{2}} = r \cot \frac{\theta}{2} = k \cot \frac{\theta}{2}$$

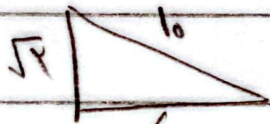
$$k = r$$

$$\sin \alpha = \frac{\sqrt{2}}{10}$$

$$\cos \alpha < 0$$

(b)

$$\sin \alpha > 0$$



$$\sqrt{100-2} = \sqrt{98} = 7\sqrt{2}$$

$$\cos \alpha = \frac{-7\sqrt{2}}{10}$$

$$\cos\left(\pi - \frac{\pi}{2}\right) = -\cos\left(\frac{\pi}{2}\right) = \frac{\sqrt{2}}{2}$$

$$\cos\left(\frac{11\pi}{2} + \alpha\right) = \cos\frac{11\pi}{2} \times \cos \alpha - \sin\frac{11\pi}{2} \times \sin \alpha$$

$$= \frac{-\sqrt{2}}{2} \times \frac{-7\sqrt{2}}{10} - \frac{\sqrt{2}}{2} \times \frac{\sqrt{2}}{10} =$$

$$\frac{7 \times 2}{10} - \frac{2}{10} = \frac{14}{10} = \frac{7}{5}$$