

$$B \rightarrow u=0 \rightarrow y=\tan \frac{\pi}{2}=1$$

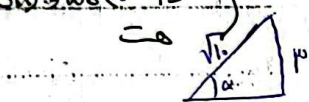
$$C \rightarrow y=-\infty \rightarrow y=\tan \frac{\pi}{2} \rightarrow -\tan \frac{\pi}{2} = -\frac{\pi}{2} \rightarrow \tan \frac{\pi}{2} = \frac{\pi}{2} \rightarrow u = \frac{\pi}{2\pi}$$

$$A \rightarrow y=+\infty \rightarrow y=\tan \frac{\pi}{2} \rightarrow -\tan \frac{\pi}{2} = \frac{\pi}{2} \rightarrow \tan \frac{\pi}{2} = -\frac{\pi}{2} \rightarrow u = -\frac{\pi}{2\pi}$$

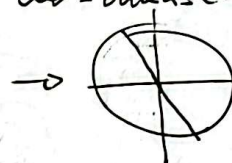
$$\rightarrow AC = \frac{\pi}{\lambda} + \frac{\pi}{\lambda} = \frac{\pi}{\lambda}$$

$$y_D=1 \rightarrow \delta = \frac{\pi}{2} \times \frac{1}{2} = \frac{\pi}{4}$$

$$\log \frac{\sin \alpha}{\cos \alpha} = \log 1 \rightarrow \log \frac{\sin \alpha}{\cos \alpha} = \log 1 \rightarrow \frac{\sin \alpha}{\cos \alpha} = 1 \rightarrow \tan \alpha = 1 \rightarrow \alpha = \frac{\pi}{4}$$



$$\sin \frac{\pi}{4} = \cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} \rightarrow \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}} \rightarrow \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$



$$\sin \alpha = \cos \alpha \rightarrow \alpha = \frac{\pi}{4}$$

$$\frac{\pi}{4} - \frac{\pi}{2} \sin \alpha - \frac{1}{2} \cos^2 \alpha = \frac{\pi}{4} - \frac{\pi}{2} \sin \alpha + \frac{1}{2} \sin^2 \alpha - \frac{1}{2} = 0$$

$$14 - 22t + 9t^2 - 9 = 0 \rightarrow 9t^2 - 22t + 5 = 0 \rightarrow t^2 - 22t + 40 = 0 \rightarrow t = \frac{11}{9}, \frac{4}{9}$$

$$\sin \alpha = \frac{1}{2} \rightarrow \cos \alpha = \pm \frac{\sqrt{3}}{2} \rightarrow \cos^2 \alpha = \frac{3}{4} \rightarrow \frac{1}{\cos^2 \alpha} = \frac{4}{3}$$

$$\sin(\alpha + \beta) = \sin \alpha \cos \beta + \cos \alpha \sin \beta$$

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$$\frac{\pi}{8} = \sin \frac{\pi}{4} \sin \frac{\pi}{4} + 1 = \sin \alpha - \cos \alpha + 1 + \sin \alpha$$

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

$$\sin(\pi + \cos \alpha) < 0 \rightarrow \sin \alpha < 0 \rightarrow \frac{\sin \alpha}{\cos \alpha} < \frac{1}{\cos \alpha} \rightarrow -\frac{\cos \alpha}{\cos \alpha} = -1 < \cos \alpha$$

$$\rightarrow \cos \alpha < 0, \sin \alpha < 0 \rightarrow \frac{\pi}{2} < \alpha < \pi$$

$$\frac{r \cos \alpha + r \sin \alpha}{\sin \alpha \cos \alpha} = 0 \rightarrow r \cos \alpha = -r \sin \alpha \rightarrow \tan \alpha = -\frac{r}{r} \rightarrow \tan \alpha = -1$$

$$\rightarrow \tan \alpha + \cot \alpha = \frac{-1}{1} + \frac{1}{-1} = -\frac{1-1}{1} = -\frac{1-1}{1} = 0$$

$$A = \frac{r \cos \alpha + r \sin \alpha}{\sin \alpha \cos \alpha}$$

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

$$\frac{\sqrt{2} \cos \alpha}{(1-\frac{1}{2})(1+\frac{1}{2})} = \frac{\sqrt{2} \cos \alpha}{(\frac{1}{2} \cos 2\alpha)(\frac{1}{2} \cos 2\alpha)} = \frac{\sqrt{2}}{\frac{1}{4} \cos 2\alpha} = \frac{\sqrt{2}}{\frac{1}{4} (2 \cos^2 \alpha - 1)} = \frac{\sqrt{2}}{\frac{1}{4} (2 \cos^2 \alpha - 1)}$$

$$A = \cos \alpha \cos \alpha \cos \alpha \rightarrow A = \frac{\sin \alpha}{\sin \alpha} \cos \alpha \cos \alpha \cos \alpha \rightarrow A = \frac{\sin \alpha \cos \alpha \cos \alpha}{\sin \alpha}$$

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

$$a \sin \alpha + b \cos \alpha = \frac{a}{\tan \alpha} + b \cos \alpha = \frac{a}{\tan \alpha} + b \cos \alpha = \frac{a}{\tan \alpha} + b \cos \alpha$$

$$\sin \alpha = 1 - \cos \alpha \rightarrow \sin \alpha = 1 - \cos \alpha - 1 \cos \alpha + 2 \rightarrow 1 = 1 - \cos \alpha - 1 \cos \alpha + 2$$

$$1 = 1 - \cos \alpha - 1 \cos \alpha + 2 \rightarrow 1 = 2 - 2 \cos \alpha \rightarrow 1 = 2 - 2 \cos \alpha \rightarrow 1 = 2 - 2 \cos \alpha \rightarrow 1 = 2 - 2 \cos \alpha$$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \rightarrow \frac{a}{\sin A} = \frac{bc}{\sin B \sin C} = \frac{bc}{\cos \frac{A}{2}} = \frac{a}{\sin \frac{A}{2}} = \frac{a}{\sin \frac{A}{2}}$$

$$\rightarrow bc = \frac{a}{\sin \frac{A}{2}} \rightarrow bc(1 - \cos A) = a \rightarrow bc - bc \cos A = a \rightarrow bc - bc \cos A = a$$

$$a^2 = b^2 + c^2 - 2bc \cos A \rightarrow bc - bc \cos A = a \rightarrow b^2 + c^2 - 2bc \cos A = a^2 \rightarrow b^2 + c^2 - 2bc \cos A = a^2$$

$$\rightarrow b = c \rightarrow \angle B = \angle C = 45^\circ \rightarrow A = 180^\circ - 124^\circ = 56^\circ$$