

۱۹، ۵ آفرین

به نام خدا

پویا منتظیان

DATE / / SUBJECT:

$$T = \frac{r_A}{|r|} = \frac{r}{r} \rightarrow AC = \frac{r}{r}, \quad 4 \rightarrow \tan \alpha = 1 \rightarrow B(0, 1) \rightarrow$$

①

$$S_{ABC} = \frac{\pi}{r} \times \frac{1}{r} \times 1 = \frac{\pi}{r} \quad \checkmark$$

$$\frac{f}{q} - (\sin \alpha) \times \frac{r}{p} - \frac{1}{f} (1 - \sin^2 \alpha) = 0 \xrightarrow{xy} 14 - 2f \sin \alpha - 9 + 9 \sin^2 \alpha = 0 \rightarrow$$

②

$$9 \sin^2 \alpha - 2f \sin \alpha + 5 = 0 \rightarrow \begin{cases} \sin \alpha = \frac{v}{p} \text{ OQEG} \\ \sin \alpha = \frac{1}{p} \rightarrow \sin \alpha = \frac{1}{q}, \cos \alpha = \frac{1}{q} \rightarrow \tan \alpha = \frac{1}{1} \end{cases}$$

③

$$\rightarrow 1 + \tan^2 \alpha = 1 + \frac{1}{1} = \frac{2}{1} \quad \checkmark$$

$$\begin{cases} \sin \alpha \\ \cos \alpha \end{cases} \rightarrow \log^{-\tan \alpha} \log^r \rightarrow \tan \alpha = r \rightarrow$$

④

$$\cos \alpha = \frac{1}{10}, \sin \alpha = \frac{9}{10} \rightarrow \sin \alpha = \frac{r}{\sqrt{10}}, \cos \alpha = \frac{1}{\sqrt{10}} \rightarrow \sin \alpha - \cos \alpha =$$

$$\frac{r}{\sqrt{10}} + \frac{1}{\sqrt{10}} = \frac{f}{\sqrt{10}} \quad \checkmark$$

$$\sin^2 \theta + \cos^2 \theta + \sin^2 \theta = \frac{f}{d} + \sin^2 \theta \rightarrow \sin^2 \theta + \frac{1}{d} = \sin^2 \theta \rightarrow$$

⑤

$$(1 - \cos^2 \theta) + \frac{1}{d} = \sin^2 \theta \rightarrow \cos^2 \theta - 2 \cos^2 \theta + \frac{1}{d} = \sin^2 \theta \rightarrow$$

⑥

$$\cos^2 \theta + \sin^2 \theta = 2(\cos^2 \theta + \sin^2 \theta) - \frac{1}{d} = 2 - \frac{1}{d} = \frac{f}{d} \quad \checkmark$$

$$\frac{\sin \alpha (r + \cos \alpha)}{r \sin \alpha} < 0 \rightarrow \sin \alpha < 0, \quad \frac{\sin \alpha (\sin \alpha - 1)}{\cos \alpha} > 0 \quad (1, 0) \quad \text{⑦}$$

$$\rightarrow \cos \alpha > 0 \rightarrow \sin \alpha \text{ bann} - \frac{1}{\cos \alpha} > 0 \rightarrow \frac{\sin^2 \alpha - 1}{\cos \alpha} > 0$$

Sahand

$$-\frac{\cos^2 \alpha}{\cos \alpha} > 0 \rightarrow -\cos \alpha > 0 \rightarrow \cos \alpha < 0 \rightarrow \text{رسمی}$$

دو افغانيان

DATE / / SUBJECT:

$$\frac{2}{\sin \alpha} = \frac{-3}{\cos \alpha} \rightarrow \frac{4}{\sin \alpha} = \frac{9}{\cos \alpha} \rightarrow 4 \cos \alpha = 9 \sin \alpha \rightarrow 13 \sin \alpha = 4 \quad (6)$$

$$\sin \alpha = \frac{4}{13}, \cos \alpha = \frac{9}{13} \rightarrow \tan \alpha = \frac{4}{9} \rightarrow \text{طبق معادله اولی} \rightarrow \tan \alpha = \frac{-2}{3}, \cot \alpha = \frac{-3}{2}$$

سین، کوسین و علامت

$$\rightarrow \tan \alpha + \cot \alpha = \frac{-2}{3} + \left(\frac{-3}{2}\right) = \frac{-13}{6}$$

نیز

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

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

$$= \frac{1}{\sqrt{-\sin\alpha + 1}} = \frac{1}{\sqrt{1-\frac{1}{2}}} = \frac{1}{\frac{1}{\sqrt{2}}} = \sqrt{2} \quad \checkmark$$

$$(\cos 10^\circ)(\cos 20^\circ)(\cos 40^\circ) \xrightarrow{\times \sin 10^\circ} \frac{1}{4} \sin 20^\circ \cos 20^\circ \cos 40^\circ = \frac{1}{8} \sin 40^\circ \cos 40^\circ$$

$$= \frac{1}{8} \sin 80^\circ = \frac{1}{8} \cos 10^\circ \times \frac{1}{\sin 10^\circ} = \frac{1}{8} \cot 10^\circ \quad \checkmark$$

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

$$2\cos^2 \alpha - 2\cos^2 \alpha + 1 = 1 \rightarrow 2\cos^2 \alpha - 2\cos^2 \alpha = -1 \quad \textcircled{1}$$

$$2\cos^2 \alpha - 2\cos^2 \alpha = \partial(2\cos^2 \alpha - 1) - 2\cos^2 \alpha = 2\cos^2 \alpha - 2\cos^2 \alpha = \partial \xrightarrow{\textcircled{1}}$$

$$2\cos^2 \alpha - 2\cos^2 \alpha = \partial = 1 - \partial = -1 \quad \checkmark$$

$$2 \sin^2 \alpha \times \sin(\alpha + 180^\circ - A) = 1 + \cos A \rightarrow 2 \sin^2 \alpha \times \cos(180^\circ - A) = 1 + \cos A \quad \textcircled{1}$$

$$\rightarrow 2 \sin^2 \alpha \times (\cos 180^\circ \cos A + \sin 180^\circ \sin A) = 1 + \cos A \rightarrow 2 \sin^2 \alpha \cos A + \sin^2 \alpha \sin A = 1 + \cos A$$

$$\rightarrow \cos A \times \cos^2 \alpha + \sin^2 \alpha \sin A = 1 \rightarrow \cos(A - \alpha) = 1 \rightarrow A = \alpha \quad \checkmark$$

Cos