

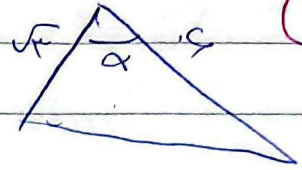
Date:

موضوع الذي خلقه الله

Subject:

ماتيس كراوى زادة

$$\frac{1}{\sqrt{x}} \times \sqrt{3} \sin \alpha = \frac{9}{\sqrt{x}} \Rightarrow \sin \alpha = \frac{3}{\sqrt{3}}$$

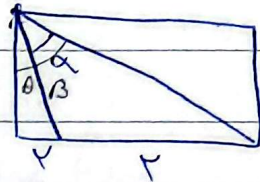


(1)

$$\sin \alpha = \frac{\sqrt{3}}{\sqrt{3}} \left. \begin{array}{l} \rightarrow \alpha = 110^\circ \\ \rightarrow \alpha = 50^\circ \end{array} \right\} \frac{110}{50} = 2$$

$$\alpha = \beta - \theta \Rightarrow \tan \alpha = \tan(\beta - \theta)$$

$$\tan(\beta - \theta) = \frac{\tan \beta - \tan \theta}{1 - \tan \beta \tan \theta}$$



(2)

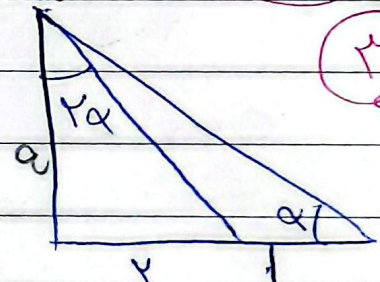
$$\frac{\frac{5}{\sqrt{x}} - \frac{2}{\sqrt{x}}}{1 + \frac{5}{\sqrt{x}} \times \frac{2}{\sqrt{x}}} = \frac{1}{\sqrt{x}} \Rightarrow \cot \alpha = \sqrt{x}$$

$$\tan \alpha = \frac{a}{p} \quad \tan \alpha = \frac{p}{a} = \frac{p \tan \alpha}{1 - \tan^2 \alpha}$$

$$\frac{p}{a} = \frac{p \tan \alpha}{1 - \tan^2 \alpha} \Rightarrow \frac{p \tan \alpha}{a} = p - \frac{p \tan^2 \alpha}{a}$$

$$\frac{p \tan \alpha}{a} = p \Rightarrow \boxed{a = \frac{p}{\sqrt{x}}}$$

$$\tan \alpha = \frac{1}{\sqrt{x}} \Rightarrow \boxed{\cot \alpha = \sqrt{x}}$$

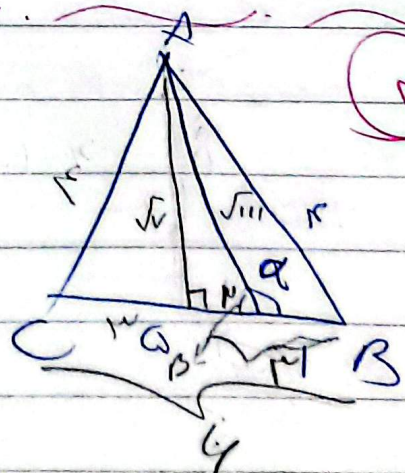


(3)

$$\tan \beta = \sqrt{\frac{p}{a}}$$

$$\tan \alpha = -\tan \beta$$

$$\tan \alpha = -\sqrt{\frac{p}{a}}$$



(4)

$$\sin^2 x + 1 = \frac{r}{r}$$

$$r \sin^2 x + \cos^2 x = \frac{r}{r} \quad (2)$$

$$\sin^2 x = \frac{1}{r} \quad \cos^2 x = \frac{r-1}{r} \Rightarrow \tan^2 x = \frac{1}{r}$$

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

$$\frac{r \sin^2 \alpha - \cos^2 \alpha + r}{r - \cos^2 \alpha} = \frac{r \cos^2 \alpha - \sin^2 \alpha + r}{r - \sin^2 \alpha}$$

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

$$\cos^2 \alpha - \sin^2 \alpha = \cos^2 \alpha$$

$$\sin\left(\alpha + \frac{\pi}{4}\right) \cos\left(-\alpha + \frac{\pi}{4}\right) = \frac{\tan\left(\alpha - \frac{\pi}{4}\right)}{2}$$

$$= \cos \alpha \sin \alpha + \cot \alpha$$

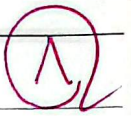
$$= \cos \alpha \sin \alpha + \frac{\cos \alpha}{\sin \alpha} \Rightarrow \frac{-\cos \alpha (\sin^2 \alpha) + \cos \alpha}{\sin \alpha}$$

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

$$\frac{r}{r} \times \frac{1}{r} = \frac{r}{r^2}$$

~~$\frac{\pi}{12}$~~ - $\frac{\pi}{12}$

$$r \cos \alpha + r \sin(\alpha - \frac{\pi}{4})$$



$$r \cos \frac{\pi}{4} + r \sin(-\frac{\pi}{4})$$

$$\frac{r}{\sqrt{2}} - r \times \frac{1}{\sqrt{2}} = \frac{1}{\sqrt{2}}$$

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$$\tan(\frac{\alpha}{2}) = \frac{1}{\sqrt{2}}$$

$$\frac{\tan \alpha - \sin \alpha}{\sin \alpha - \cos \alpha} = ?$$



$$\frac{\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}}}{\frac{1}{\sqrt{2}} - \frac{1}{\sqrt{2}}}$$

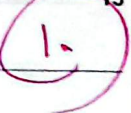
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$$\tan \alpha = \frac{\frac{1}{\sqrt{2}}}{\frac{10}{14}} = \frac{1}{10}$$

$$\frac{r \times 1}{10 \times 10} \times \frac{14}{\sqrt{2}} = \frac{-14}{100}$$



$$\cos \alpha > 0 \Rightarrow \frac{\cos \alpha}{\sin \alpha}$$



$$\sin \alpha > \sin \alpha$$

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

$$\boxed{\sin \alpha} \Rightarrow 1 > \cos \alpha$$

Min