

$$S_{\square} = ab \sin \alpha = r_n^2 \sin 100^\circ = \omega r$$

$$r_n^2 = \omega r \rightarrow r_n = \sqrt{\omega r} \rightarrow r_n = \sqrt{r \omega}$$

$$P_{\square} = 1 \cdot r_n = \sqrt{r \omega}$$

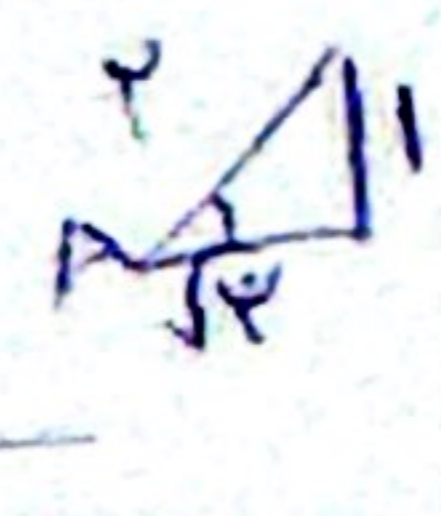
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$S_{\Delta} = \frac{1}{2} ab \sin \alpha$

$$S_{\Delta ABC} - S_{\Delta ADE} = 1/\omega$$

$$\frac{AB \cdot AC \sin A}{2} - \frac{AE \cdot AD \sin A}{2} = 1/\omega$$

$$r \omega \sin A - r A \sin A = 1/\omega$$

$$\sqrt{\sin A} = 1/\omega \rightarrow \sin A = 1/\omega = \frac{1}{\sqrt{r}} \rightarrow \tan A = \frac{1}{\sqrt{r}} = \frac{\sqrt{r}}{r}$$


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

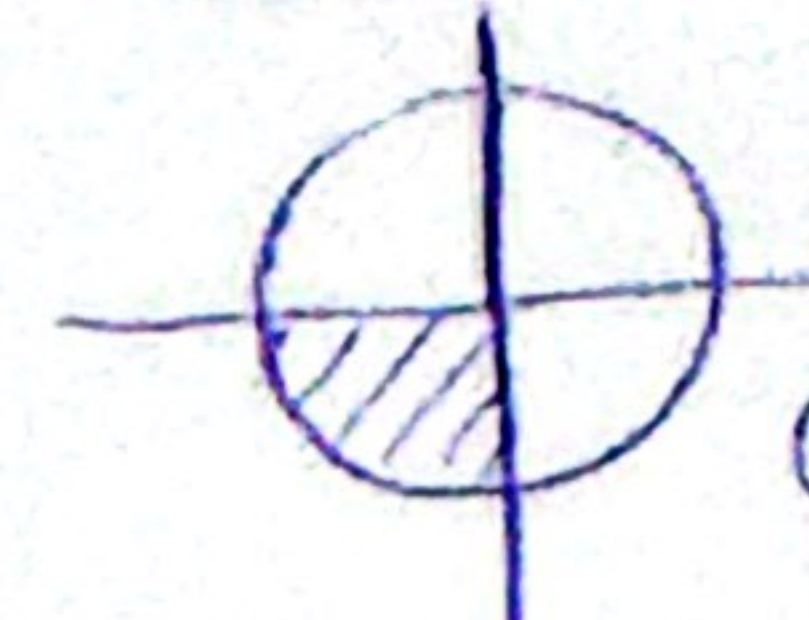
$$\frac{1}{|\cos \alpha|} = \frac{1}{\sqrt{\cos^2 \alpha}} = \tan \alpha = \frac{1 + \sin \alpha}{|\cos \alpha|}$$

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

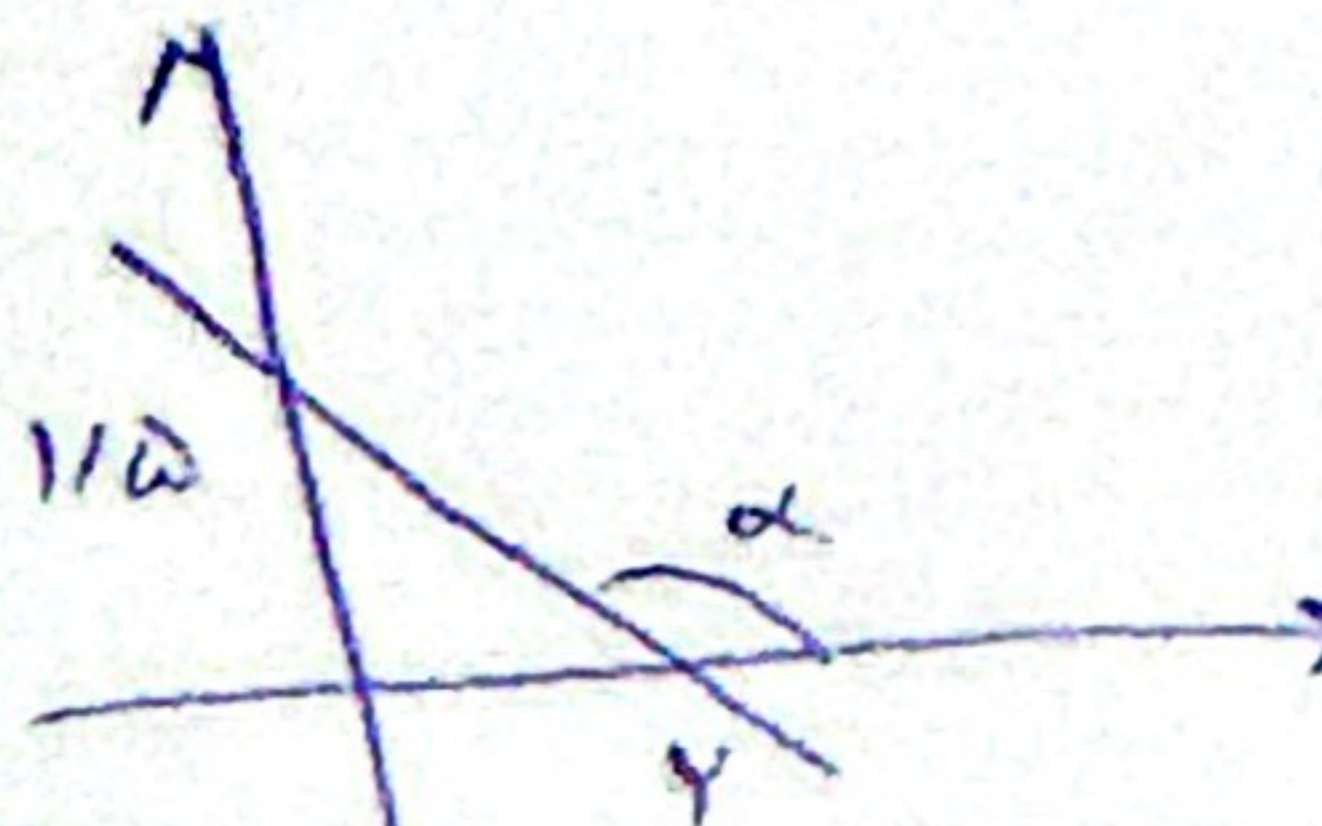
$\sin \alpha < 0$

$\cos \alpha < 0$

دو ربع سوم و چهارم $\rightarrow \alpha$



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$\tan \alpha = m$

$\tan \alpha = -\frac{r}{\sqrt{r}}$


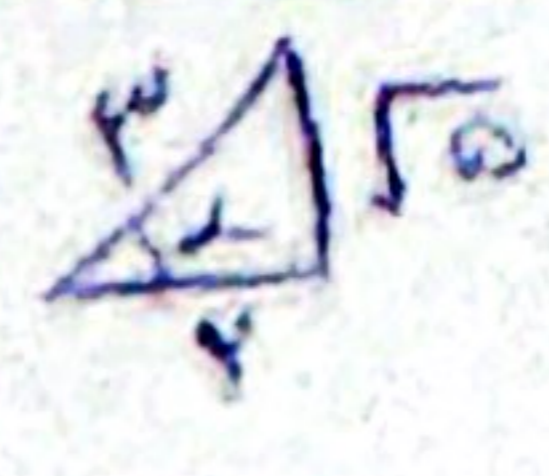
$$\tan\left(\frac{\pi}{2} - \alpha\right) = \cot \alpha = -\frac{\sqrt{r}}{r}$$


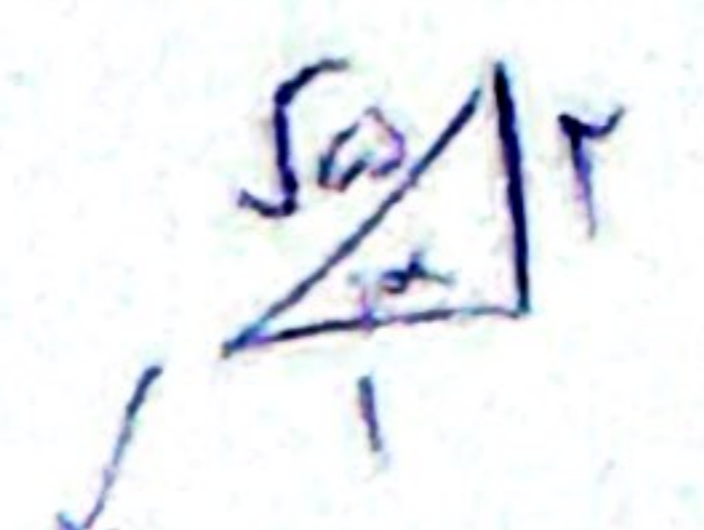
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$$\frac{r \cos(\pi - \alpha) - r \sin(100^\circ)}{\sin(\pi - \alpha) - \cos(\pi - \alpha)} = \frac{r \cos \frac{\pi}{2} - r r^\circ - r \sin \pi - r r^\circ}{\sin \pi + r r^\circ - \cos \frac{\pi}{2} + r r^\circ} = \frac{-r \sin r^\circ - r \sin r^\circ}{-\sin r^\circ - \sin r^\circ} = \frac{-2 \sin r^\circ}{-2 \sin r^\circ} = 1$$

$1/\omega$

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$\cos \alpha = \frac{y}{r}$   $\sin \alpha = -\frac{\sqrt{a}}{r}$
 $\tan \alpha = \frac{\sqrt{a}}{y}$
 $\frac{\sin(\alpha + \alpha) - \sin(\alpha - \alpha)}{|\tan^2 \alpha - 1|} = \frac{\cos \alpha + \sin \alpha}{|\tan^2 \alpha - 1|} = \frac{\frac{y}{r} - \frac{\sqrt{a}}{r}}{|\frac{a}{r^2} - 1|} = \frac{y - \sqrt{a}}{r} = \frac{r - \sqrt{a}}{r}$

$\sin \alpha = r \cos \alpha \rightarrow \tan \alpha = r$  
 $\cos \alpha = -\frac{1}{\sqrt{a}} = -\frac{\sqrt{a}}{a}$

$\tan \alpha = m_b \xrightarrow{\alpha = 45^\circ} \tan 45^\circ = m_b$

$r \tan \alpha + (m^2 - 1)y = r$

$\frac{r}{b} = \frac{-r a}{m^2 - 1} = \sqrt{r} \rightarrow \sqrt{r} m^2 + r m - \sqrt{r} = 0$

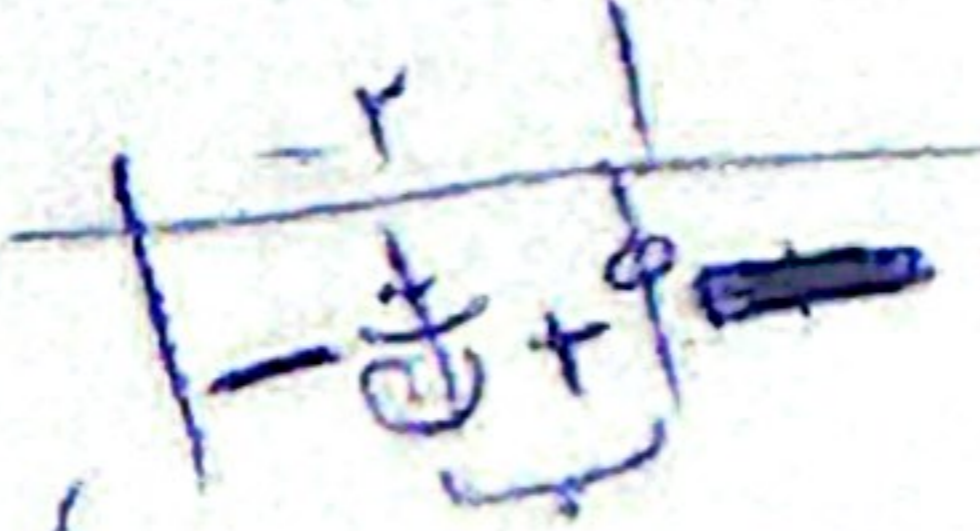
$|m_1 - m_2| = \frac{\sqrt{\Delta}}{|a|} = \frac{\sqrt{17}}{\sqrt{r}} = \frac{r}{\sqrt{r}} = \frac{r \sqrt{r}}{r}$

$-\frac{\pi}{2} < \alpha < \frac{\pi}{2}$



$0 < \frac{\pi}{2} - \alpha < \frac{\pi}{2}$

$0 < \tan(\frac{\pi}{2} - \alpha) \rightarrow 0 < \frac{1 - m}{r + m}$


 $-r < m < r$

$\tan 45^\circ = \sin 45^\circ$

$\tan(45^\circ) \cos(45^\circ) + \tan(45^\circ) \sin(45^\circ) =$
 $= -\frac{1}{\sqrt{r}} \times -\frac{\sqrt{r}}{r} + (-\sqrt{r}) \times (\frac{r}{r}) = -1$

