

$$S = \frac{1}{2} \times v \times w \times \sin 10^\circ = \frac{1}{2} \times v \times w \times \frac{1}{10} = \frac{vw}{20}$$

$$w \times v = \omega \varepsilon \rightarrow w^2 = 1 \times \varepsilon \rightarrow w = \sqrt{\varepsilon}$$

$$S_{\text{مربع}} = \frac{1}{2} (v \times w + w \times v) = v \cdot \sqrt{\varepsilon}$$

۵

$$S_{ABC} = \frac{1}{2} \times AB \times AC \times \sin \hat{A} = \frac{1}{2} \times AC \times BC \times \sin \hat{C} = \frac{1}{2} \times AC \times AB \times \sin \hat{A}$$

مساحت هر دو مثلث برابر است پس زاویه A را می توانیم به سبب صحت فرض داریم:

$$S_{ABC} = S_{ADE} = \frac{1}{2} v \omega \Rightarrow \frac{1}{2} AB \times AC \times \sin \hat{A} = \frac{1}{2} AD \times AE \times \sin \hat{A} = \frac{1}{2} \times \varepsilon$$

$$\Rightarrow \frac{1}{2} \times \omega \times v \times \sin \hat{A} = \frac{1}{2} \times v \times \varepsilon \times \sin \hat{A} = \frac{v}{\varepsilon} \Rightarrow \omega \sin \hat{A} = \frac{v}{\varepsilon} \Rightarrow v \sin \hat{A} = \frac{v}{\varepsilon}$$

$$\sin \hat{A} = \frac{1}{\varepsilon}$$

با توجه به اینکه زاویه A کاداست و سینوس A برابر 1/ε پس A=π/2 و مقدار اندازه شده برابر است با: $\frac{\sqrt{\varepsilon}}{\varepsilon} = \frac{1}{\sqrt{\varepsilon}}$

۵

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

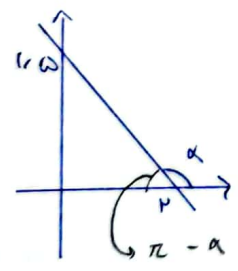
$$\frac{1}{|\cos \alpha|} - \frac{\sin \alpha}{\cos \alpha} = \frac{1 + \sin \alpha}{|\cos \alpha|} \rightarrow \cos \alpha < 0$$

موجب است

$$\frac{|\sin \alpha|}{\cos \alpha} = -\frac{\sin \alpha}{\cos \alpha} \rightarrow \sin \alpha < 0$$

۵

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



$$\tan(\pi - \alpha) = \frac{1 \cdot \omega}{v} = \frac{\omega}{v} \Rightarrow \tan \alpha = -\frac{\omega}{v} \Rightarrow \cot \alpha = -\frac{v}{\omega}$$

۵

$$\frac{w \cos(\pi + \pi/4) - v \sin(\pi + \pi/4)}{\sin(\pi + \pi/4) - \cos(\pi + \pi/4)} = ?$$

$$\frac{w \cos(\frac{5\pi}{4} - \pi/4) - v \sin(\pi - \pi/4)}{\sin(\pi + \pi/4) - \cos(\frac{5\pi}{4} + \pi/4)} = \frac{-\sqrt{2} \sin(\pi/4) - v \sin(\pi/4)}{-\sin(\pi/4) - \sin(\pi/4)} = -\frac{\omega}{-v} = \frac{\omega}{v}$$

۵

$$\frac{\sin(\frac{\pi}{2} + \alpha) - \sin(\alpha - \frac{\pi}{2})}{|\tan^2 \alpha - 1|} = *$$

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

p, q, r, cos

$$\sin^2 \alpha + \frac{r}{r} = 1 \rightarrow \sin \alpha = -\frac{\sqrt{a}}{r}$$

$$\frac{\sin^2 \alpha}{\cos^2 \alpha} - 1 = \left| \frac{\sin^2 \alpha - 1}{\cos^2 \alpha} \right| = \left| \frac{\sin^2 \alpha - \cos^2 \alpha}{\cos^2 \alpha} \right| = \left| \frac{1 - 2\cos^2 \alpha}{\cos^2 \alpha} \right| = \frac{1 - \frac{r}{r}}{\frac{r}{r}} = \frac{\frac{1}{r} - \frac{1}{r}}{\frac{r}{r}} = \frac{1}{r}$$

$$* \frac{\cos \alpha + \sin \alpha}{\frac{1}{r}} = \frac{\frac{r - \sqrt{a}}{r}}{\frac{1}{r}} = \frac{r - \sqrt{a}}{r}$$

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

p/r

$$1 + \tan^2 \alpha = \frac{1}{\cos^2 \alpha} \rightarrow 1 + r^2 = \frac{1}{\cos^2 \alpha} \rightarrow \cos^2 \alpha = \frac{1}{1+r^2} \rightarrow \cos \alpha = \pm \frac{1}{\sqrt{1+r^2}} \xrightarrow{p/r} \cos \alpha = -\frac{1}{\sqrt{1+r^2}} = -\frac{\sqrt{a}}{a}$$

$$r m x + (m^2 - 1)y = r \quad \tan \phi_0 = \sqrt{r} \rightarrow \frac{-r m}{m^2 - 1} = \sqrt{r}$$

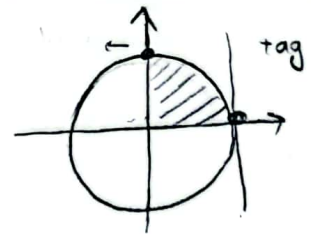
$$\sqrt{r} m^2 - \sqrt{r} = -r m \rightarrow \sqrt{r} m^2 + r m - \sqrt{r} = 0 \rightarrow \Delta = (r)^2 - 4(\sqrt{r})(-\sqrt{r}) = r + 4r = 5r > 0$$

$$\begin{cases} m_1 = \frac{-r + \sqrt{5r}}{2\sqrt{r}} = \frac{r + \sqrt{5r}}{2\sqrt{r}} = \frac{1}{\sqrt{r}} = \frac{\sqrt{r}}{r} \\ m_2 = \frac{-r - \sqrt{5r}}{2\sqrt{r}} = -\frac{r + \sqrt{5r}}{2\sqrt{r}} = -\frac{r}{\sqrt{r}} \times \frac{\sqrt{r}}{\sqrt{r}} = -\frac{r\sqrt{r}}{r} \end{cases} \rightarrow |m_1 - m_2| = \left| \frac{\sqrt{r}}{r} + \frac{r\sqrt{r}}{r} \right| = \frac{r\sqrt{r}}{r}$$

$$\tan\left(\frac{\pi}{2} - x\right) = \frac{1-m}{r+m} \quad \text{if } -\frac{\pi}{2} < x < \frac{\pi}{2}$$

$$(1) \quad -\frac{\pi}{2} < -x < \frac{\pi}{2} \rightarrow 0 < \frac{\pi}{2} - x < \frac{\pi}{2}$$

$$(2) \quad \frac{1-m}{r+m} > 0 \rightarrow \frac{-r}{-|+|} = (-r, 1)$$



$$\tan(\pi_0) \cos(\pi_1) + \tan(\pi_1) \sin(\pi_2) = \rightarrow \left(-\sqrt{r} \times -\frac{\sqrt{r}}{r}\right) + \left(-\sqrt{r} \times \frac{\sqrt{r}}{r}\right) = \frac{r}{r} - \frac{r}{r} = 0$$

$$\tan(\pi_0) = \tan\left(\frac{\pi}{2} - \phi_0\right) = \tan(-\phi_0) = -\sqrt{r}$$

$$\cos(\pi_1) = \cos(\pi_0 + \pi_2) = -\cos \pi_0 = -\frac{\sqrt{r}}{r}$$

$$\tan(\pi_1) = \tan(\pi_0 - \pi_2) = -\tan \pi_0 = -\sqrt{r}$$

$$\sin(\pi_2) = \sin \pi_2 = \sin(\pi_0 - \phi_0) = \sin \phi_0 = \frac{\sqrt{r}}{r}$$