

$$r_n \Rightarrow (r_n)(r_n)(\sin 150^\circ) = \omega \varepsilon \rightarrow x^2 = \frac{\omega \varepsilon}{r} \rightarrow x = \sqrt{\frac{\omega \varepsilon}{r}}$$

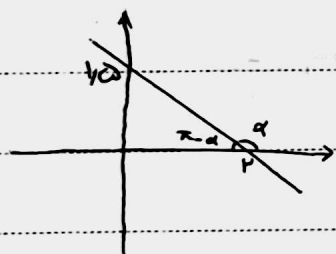
$$p = r(r_n + r_n) = 10x \rightarrow 10\sqrt{\frac{\omega \varepsilon}{r}} = \boxed{r_0 \sqrt{r}}$$

$$\left(\frac{1}{r} \times \omega \times v \times \sin \hat{A}\right) \cdot \left(\frac{1}{r} \times v \times \varepsilon \times \sin \hat{A}\right) = 1, v \omega \rightarrow \frac{r \omega}{r} \sin \hat{A} - \frac{r \varepsilon}{r} \sin \hat{A} = 1, v \omega \quad (5)$$

$$\frac{v}{r} \sin \hat{A} = \frac{v}{\varepsilon} \rightarrow \sin \hat{A} = \frac{1}{\varepsilon} \rightarrow \hat{A} = 30^\circ \rightarrow \tan \hat{A} = \tan 30^\circ = \boxed{\frac{\sqrt{3}}{3}} \quad (5)$$

$$\frac{|\sin \alpha|}{\cos \alpha} = \frac{-1}{\cot \alpha} = \frac{-\sin \alpha}{\cos \alpha} \Rightarrow \sin \alpha < 0 \rightarrow \frac{1}{\sqrt{\cos^2 \alpha}} \tan \alpha = \frac{1}{|\cos \alpha|} \rightarrow \frac{\sin \alpha}{-\cos \alpha} \quad (3)$$

$$= \frac{1 + \sin \alpha}{|\cos \alpha|} \Rightarrow |\cos \alpha| = -\cos \alpha \rightarrow \cos \alpha < 0 \rightarrow \begin{cases} \sin \alpha < 0 \\ \cos \alpha < 0 \end{cases} \rightarrow \alpha = \boxed{\frac{3\pi}{2} - \alpha} \quad (5)$$



$$\tan(\pi - \alpha) = \cot \alpha \quad (3)$$

$$\tan(\pi - \alpha) = \frac{1/\omega}{v} = \frac{r}{\varepsilon} \rightarrow \tan \alpha = -\frac{r}{\varepsilon} \quad (5)$$

$$\cot \alpha = \tan(\pi - \alpha) = -\frac{\varepsilon}{r}$$

$$\frac{r \cos(r \varepsilon \Lambda) - r \sin(10 \Lambda)}{\sin(r_0 r) - \cos(r \varepsilon r)} = \frac{r \cos(r v_0 - r r) - r \sin(10_0 - r r)}{\sin(10_0 + r r) - \cos(r v_0 + r r)} \quad (3)$$

$$= \frac{r \cos(\frac{r \varepsilon}{r} - r r) - r \sin(\pi - r r)}{\sin(\pi + r r) - \cos(\frac{r \varepsilon}{r} + r r)} = \frac{-r \sin r r - r \sin r r}{-\sin r r - \sin r r} = \frac{-2 \sin r r}{-2 \sin r r}$$

$$\boxed{\frac{\omega}{r} = \frac{r}{\varepsilon} \omega}$$

$$\frac{\sin(\pi/2 + \alpha) - \sin(\alpha - \pi)}{|\tan^2 \alpha - 1|} = \frac{\sin(\pi/2 + \alpha) - (-\sin(\pi - \alpha))}{|\tan^2 \alpha - 1|} \quad (9)$$

$$= \frac{\cos \alpha + \sin(\pi - \alpha)}{|\tan^2 \alpha - 1|} = \frac{\sin \alpha + \cos \alpha}{|\tan^2 \alpha - 1|} \quad * \cos \alpha = \frac{r}{r} \rightarrow \sin \alpha = \frac{\omega}{r} \rightarrow \sin \alpha = \frac{\sqrt{\omega}}{r}$$

$$\tan \alpha = \frac{-\sqrt{\omega}}{r} \times \frac{r}{r} = \frac{-\sqrt{\omega}}{r} \Rightarrow \frac{-\sqrt{\omega} + r/c}{|\omega/c - 1|} = \frac{r - \sqrt{\omega}}{r} = \frac{r(r - \sqrt{\omega})}{r} = \frac{r - \sqrt{\omega}}{r}$$

$$r \rightarrow \alpha \rightarrow \cos \alpha \leftarrow \quad (10)$$

$$\sin^2 \alpha + \cos^2 \alpha = 1 \quad \sin \alpha = r \cos \alpha \rightarrow r \cos^2 \alpha + \cos^2 \alpha = 1 \rightarrow \omega \cos^2 \alpha = 1 \rightarrow \cos^2 \alpha = \frac{1}{\omega}$$

$$\rightarrow \cos \alpha = \frac{-1}{\sqrt{\omega}} \quad \left[\frac{-\sqrt{\omega}}{\omega} \right] \quad (5)$$

$$m = \tan \theta_0 = \sqrt{r} \rightarrow m = \frac{-a}{b} \rightarrow \frac{-r m}{m^2 - 1} = \sqrt{r} \quad (11)$$

$$\sqrt{r} m^2 + r m - \sqrt{r} = 0 \quad \Delta = 14 \rightarrow m = \frac{-r \pm \sqrt{r}}{r \sqrt{r}} \rightarrow m_1 = \frac{1}{\sqrt{r}}, m_2 = \frac{-r}{\sqrt{r}}$$

$$|m_1 - m_2| = \left| \frac{1}{\sqrt{r}} - \left(-\frac{r}{\sqrt{r}} \right) \right| = \frac{r}{\sqrt{r}} = \frac{r \sqrt{r}}{r}$$

$$-\pi/2 < \alpha < \pi/2 \rightarrow \cdot < \alpha - \pi/2 < \pi/2 \rightarrow \text{دائرة} \rightarrow \tan \alpha \quad (12)$$

$$\frac{1-m}{r+m} > 0 \quad \left| \frac{-r}{-1} \right| \rightarrow m \in (-1, 1)$$

$$\tan(\pi_0) = \tan(\pi_0 - \theta_0) = -\tan \theta_0 = -\sqrt{r} \quad (13)$$

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

$$\tan(\theta_0) = \tan(\omega \theta_0 - \theta_0) = -\tan \theta_0 = -\sqrt{r}$$

$$\sin(\theta_0) = \sin(\theta_0 - \theta_0) = \sin \theta_0 = \frac{\sqrt{r}}{r}$$

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$$\left(-\frac{\sqrt{r}}{r} \right) \left(-\sqrt{r} \right) + \left(-\sqrt{r} \right) \left(\frac{\sqrt{r}}{r} \right) = \left[\frac{r}{r} - \frac{r}{r} = 0 \right]$$