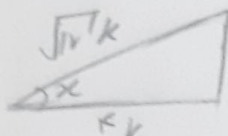


$$-1 + \left(-\frac{\sqrt{3}}{2}x - \frac{\sqrt{3}}{2}\right) = -\frac{1}{2}$$

$$- \frac{\sqrt{3}}{2}x - \frac{\sqrt{3}}{2} + \left(-\frac{1}{2}\right) = 0$$

$$\cot x = \frac{1}{\tan x} = \frac{1}{\frac{\sqrt{3}}{2}} = \frac{2}{\sqrt{3}}$$



$$\Rightarrow \sin x = \frac{\sqrt{3}}{2} \Rightarrow \cos x = \frac{1}{2}$$

$$\frac{2x \cdot \frac{1}{\sqrt{3}} - \frac{1}{\sqrt{3}}}{\frac{2}{\sqrt{3}} + \frac{1}{\sqrt{3}}} = \frac{11}{\omega}$$

$$\frac{2x \cdot \frac{1}{\sqrt{3}} + \frac{1}{\sqrt{3}}}{\frac{2}{\sqrt{3}} - \frac{1}{\sqrt{3}}} = \frac{11}{\omega}$$

$$\sin a = r \cos a$$

$$\Rightarrow \sin^2 a = r^2 \cos^2 a$$

$$\sin^2 a + \cos^2 a = 1 \Rightarrow \omega \cos^2 a = 1 \Rightarrow \cos^2 a = \frac{1}{\omega} \Rightarrow \cos a = \pm \frac{1}{\sqrt{\omega}}$$

$$\sin a = \frac{\sqrt{3}}{2} \Rightarrow 120^\circ < a < 180^\circ$$

$$\frac{11\pi}{6} = 2\pi + \frac{5\pi}{6}$$

$$\Rightarrow \cos\left(\frac{11\pi}{6} + a\right) = -\cos a$$

$$\frac{1}{\omega} + \cos^2 a = 1$$

$$\Rightarrow \cos^2 a = \frac{9}{\omega} \Rightarrow \cos a = \pm \frac{3}{\sqrt{\omega}} \Rightarrow \cos\left(\frac{11\pi}{6} + a\right) = \frac{3}{\sqrt{\omega}}$$

$$\frac{13\pi}{6} = 2\pi + \frac{5\pi}{6}$$

$$\tan a = \frac{1}{\sqrt{3}} \Rightarrow 0 < a < 60^\circ$$

$$\Rightarrow \sin\left(\frac{13\pi}{6} + a\right) = -\cos a$$

$$\tan^2 a + 1 = \frac{1}{\cos^2 a} \Rightarrow \frac{1}{9} + 1 = \frac{\omega}{9} = \frac{1}{\cos^2 a}$$

$$\Rightarrow \cos^2 a = \frac{9}{\omega} \Rightarrow \cos a = \pm \frac{3}{\sqrt{\omega}}$$

$$\Rightarrow \sin\left(\frac{13\pi}{6} + a\right) = -\frac{3}{\sqrt{\omega}}$$

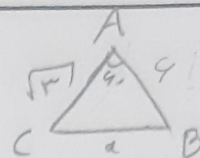
$$r \sin^2 x + \cos^2 x = \frac{5}{r}$$

$$\Rightarrow \sin^2 x + \sin^2 x + \cos^2 x = \frac{5}{r} \Rightarrow \sin^2 x = \frac{1}{r} \Rightarrow \cos^2 x = \frac{4}{r}$$

$$\tan^2 x = \frac{1}{4} \Rightarrow \tan x = \pm \frac{1}{2}$$

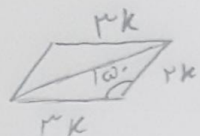
$$\frac{1}{r} \times r \times \sqrt{r} \times \sin A = r/\omega \Rightarrow \sin A = \frac{r/\omega}{r\sqrt{r}} = \frac{1/\omega}{\sqrt{r}} = \frac{\sqrt{r}}{r\sqrt{r}} = \frac{\sqrt{r}}{r} \Rightarrow A = 45^\circ$$

$$A+B+C=180^\circ \Rightarrow B+C+45^\circ=180^\circ \Rightarrow B+C=135^\circ$$



$$\frac{a}{\frac{\sqrt{r}}{r}} = \frac{r}{\sin C} = \frac{\sqrt{r}}{\sin B} \Rightarrow \left. \begin{aligned} a \sin C &= r\sqrt{r} \\ a \sin B &= \frac{r}{r} \end{aligned} \right\} \begin{aligned} a_{\max} &= r \\ a_{\min} &= \frac{r}{r} \end{aligned}$$

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



$$r \times r \times k \times \frac{1}{r} \times \sin \omega = r \times k = \omega r \Rightarrow k = \omega \Rightarrow k = r\sqrt{r}$$

$$l \cdot k = l \cdot r\sqrt{r} = \boxed{r \cdot \sqrt{r}}$$

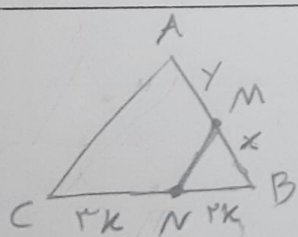
$$\left(\frac{1}{r} \times v \times r \times \sin A\right) + 1/v\omega = \frac{1}{r} \times v \times \omega \times \sin A$$

$$\frac{1}{r} \times v \times \sin A = 1/v\omega$$

$$\Rightarrow r/\omega \sin A = 1/v\omega$$

$$\Rightarrow \sin A = \frac{1}{r} \Rightarrow A = 30^\circ$$

$$\tan r = \frac{1}{\sqrt{r}}$$



$$\Delta ABC = \frac{1}{r} \times (y+x) \times \omega k \times \sin B$$

$$\Delta BNM = \frac{1}{r} \times x \times r k \times \sin B$$

$$r \times \frac{1}{r} \times x \times r k \times \sin B = \frac{1}{r} \times (x+y) \times \omega k \times \sin B$$

$$\Rightarrow \frac{r \times \frac{1}{r} \times x \times r k \times \sin B}{\frac{1}{r} \times (x+y) \times \omega k \times \sin B} = \frac{rx}{\omega x + \omega y} = 1 \Rightarrow rx = \omega x + \omega y \Rightarrow x = \omega y$$

$$\frac{BM}{AM} = \frac{x}{y} = \frac{\omega y}{y} = \boxed{\omega}$$

$$\frac{1}{\sqrt{\cos a}} - \tan a = \frac{1 + \sin a}{|\cos a|} \Rightarrow \frac{1}{|\cos a|} - \frac{\sin a}{\cos a} = \frac{1 + \sin a}{|\cos a|} \Rightarrow \frac{-\sin a}{|\cos a|} = \frac{\sin a}{\cos a} \Rightarrow \cos a < 0$$

$$\frac{|\sin a|}{\cos a} = -\frac{1}{\cot a} \Rightarrow \frac{|\sin a|}{\cos a} = -\frac{\sin a}{\cos a} \Rightarrow \sin a < 0$$

$$\left. \begin{aligned} \cos a &< 0 \\ \sin a &< 0 \end{aligned} \right\} \boxed{\text{Third Quadrant}}$$