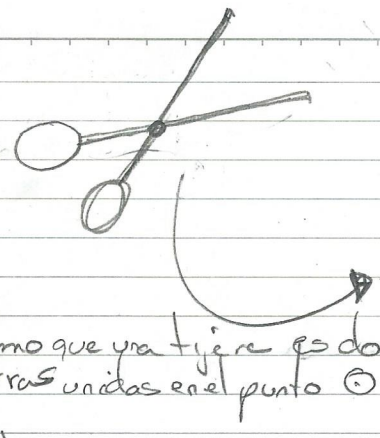
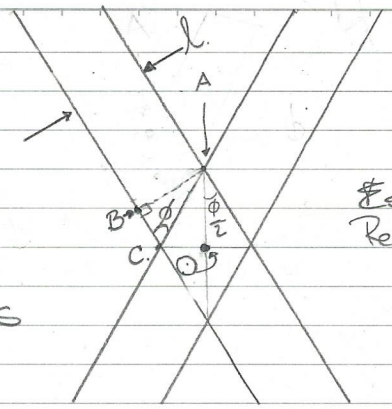
faster than the speed of light!?!?

NO.

DATE Dec 25.



Assumo que ya tiene estos dos barras unidas en el punto ⊙



Esquemático fácil. Recordemos líneas paralelas.

First

① $\sin(\phi) = \frac{AB}{AC}$ ② $\cos(\phi/2) = \frac{AO}{AC}$

thus. from 1 ∧ 2 we have.

$$AO = \frac{\cos(\phi/2)}{\sin\phi} AB.$$

Since $l = AB$. we have that the above equation becomes rpm

$$AO = l \left\{ \frac{\cos\phi/2}{\sin\phi} \right\} \quad (3)$$

from trigonometry we can simplify even more and we have.

$\sin 2\theta = 2\sin\theta\cos\theta$ → Replace $\theta = \phi/2$

→ $\sin(2(\phi/2)) = 2\sin\frac{\phi}{2}\cos\phi/2.$

thus $AO = \frac{l}{2\sin^2\phi/2}$

Si derivo AO con respecto a tiempo obtengo velocidad para el punto A. [o línea $\overline{AB}$]

$$\frac{d}{dt}\left[AO = \frac{l}{2\sin^2\phi/2} \right] \rightarrow v = -\frac{l\cos\phi/2}{4\sin^2(\frac{\phi}{2})}\frac{d\phi}{dt} = v = -\frac{l}{4}\frac{\cos\phi/2}{\sin^2(\phi/2)}\omega$$

donde ω es la velocidad angular, y ϕ es la variable y l es constante. ω, l son constantes.