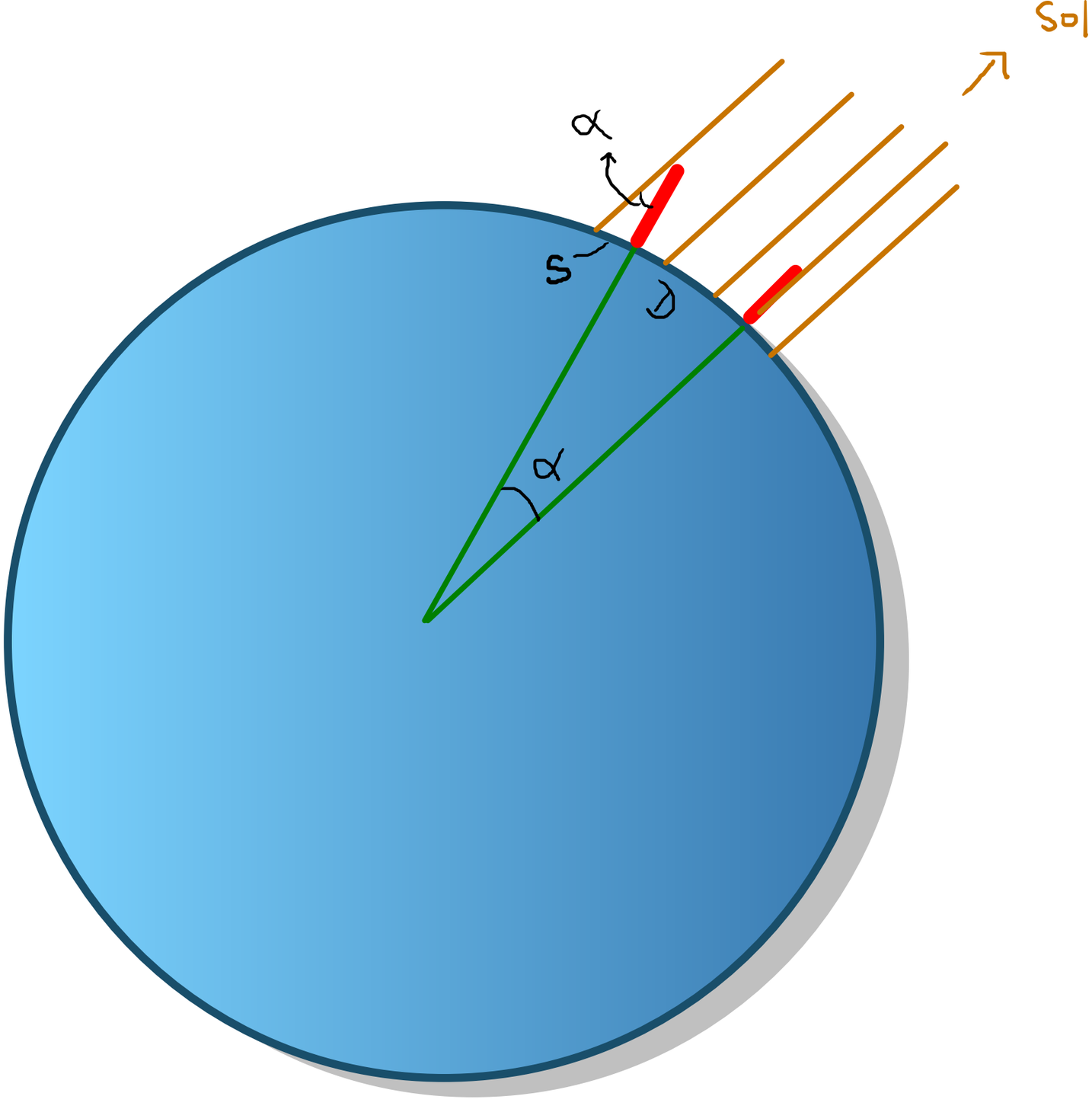
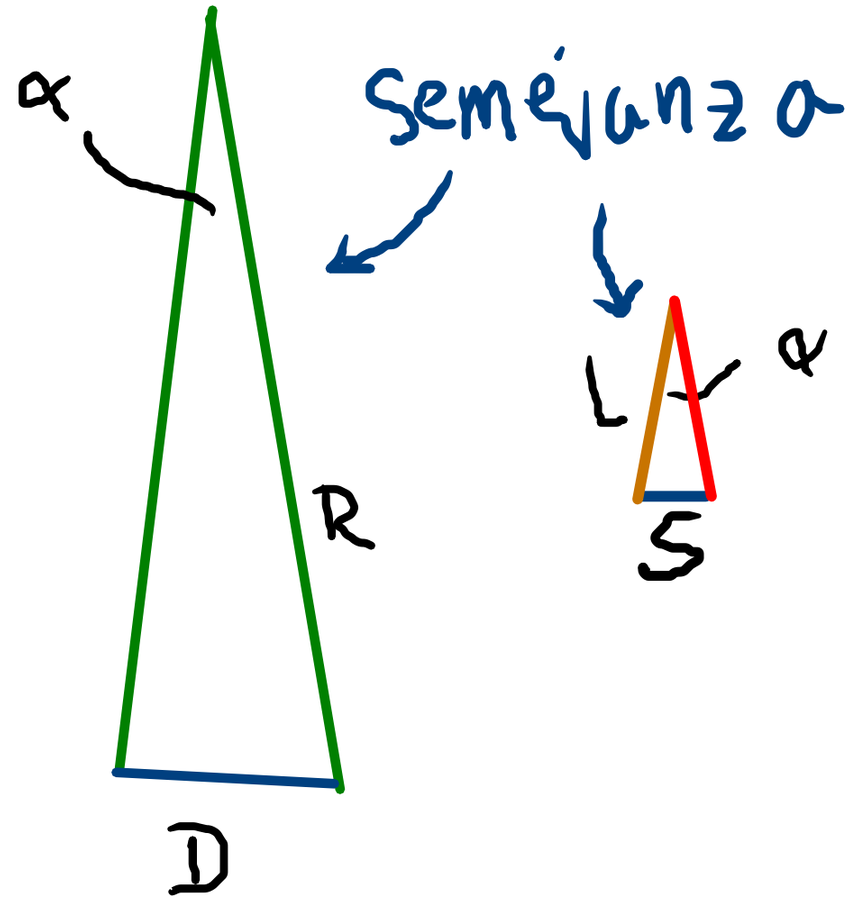

Sol
α
s
d
α



Semejanza

$$\frac{R}{D} = \frac{L}{S}$$

$$R = \frac{D \times L}{S}$$

$$R = \frac{400\,km \times 100\,mt}{6,2\,mt}$$

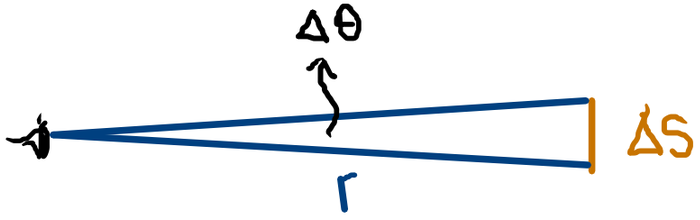
$D = 400\,km$

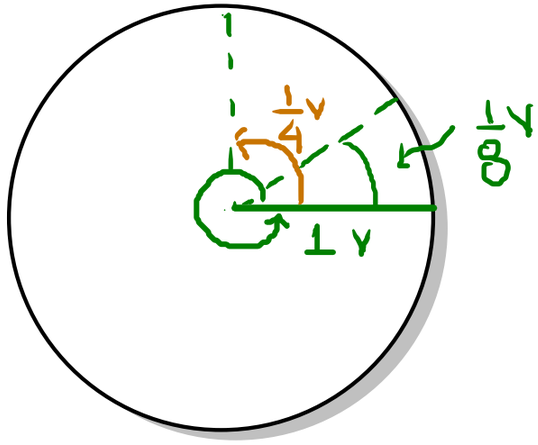
$L = 100\,mt$

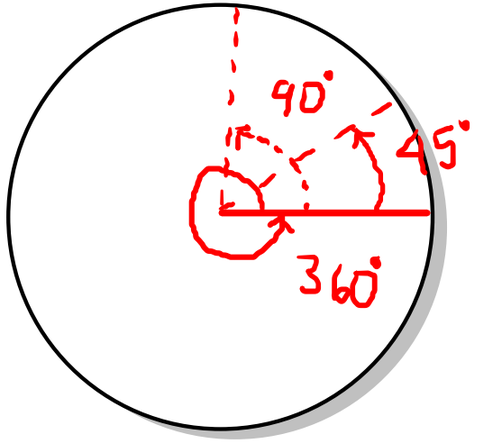
$S = 6,2$

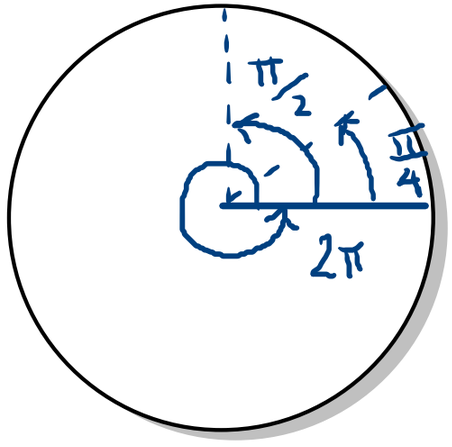
$$R \cong 6.400\,km$$

MEDICIÓN DE ÁNGULOS

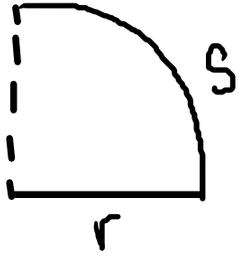




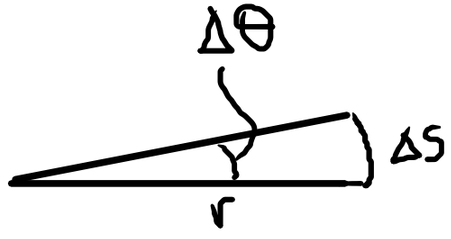




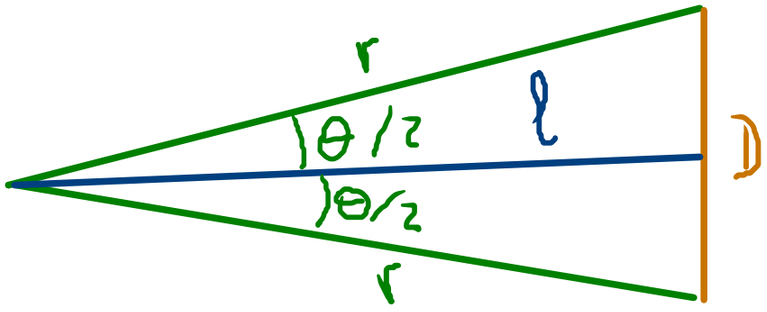
$P = 2\pi r$



$S = \frac{\pi}{2} r$



$\Delta S = \overbrace{\Delta\theta}^{rad} r$



$$\operatorname{sen}\frac{\theta}{2} = \frac{D}{2r} \longrightarrow D = \frac{2D}{2} = 2r\operatorname{sen}\frac{\theta}{2}$$

Pero $\operatorname{sen}\alpha = \alpha$

α "pequeño"

$$D = 2r\frac{\theta}{2}$$

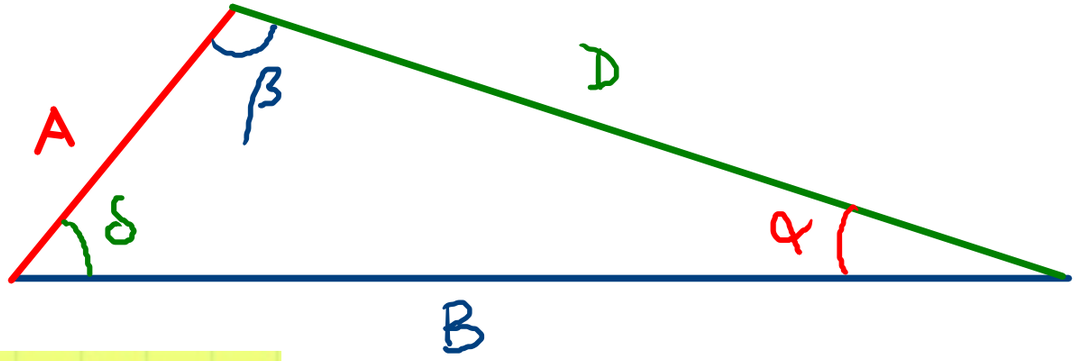
$$\boxed{D = \theta r}$$

θ en rad

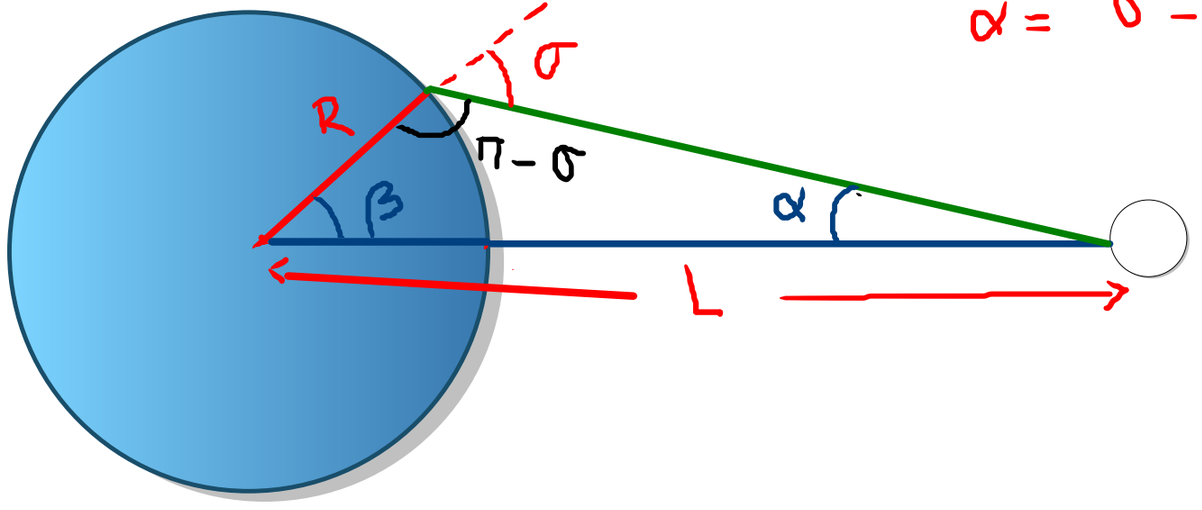
$\theta \ll \pi$

Experimento: determine el ángulo que la Luna hace respecto de tu ojo produciendo un "eclipse" de Luna con un disco de diámetro conocido. Calcúlelo en radianes y conviértalos en grados.

TEOREMA DEL SENO



$$\frac{A}{\operatorname{sen}\alpha} = \frac{B}{\operatorname{sen}\beta} = \frac{D}{\operatorname{sen}\delta}$$



$$\alpha + \beta + (\pi - \sigma) = \pi$$

$$\alpha = \sigma - \beta$$

Teo del seno:

$$\frac{R}{\operatorname{sen}(\sigma - \beta)} = \frac{L}{\operatorname{sen}(\pi - \sigma)}$$

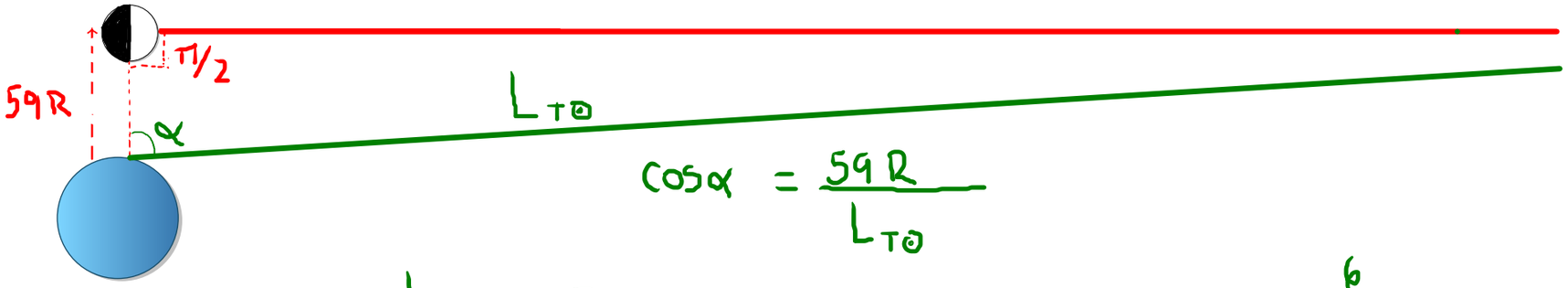
$$L = \frac{\operatorname{sen}(\pi - \sigma)}{\operatorname{sen}(\sigma - \beta)} R$$

$$L = \frac{\operatorname{sen}(\pi - \sigma)}{\operatorname{sen}(\sigma - \beta)} R \Rightarrow L = \frac{\operatorname{sen}\sigma}{\operatorname{sen}(\sigma - \beta)} R$$

$$L \cong 60 R_T = 60 \times 6.400\,km$$

$$\boxed{L = 38.400\,Km}$$

3.) Distancia al sol



$$\cos\alpha = \frac{59R}{L_{TO}}$$

$$L_{TO} = \frac{59R}{\cos\alpha} = \frac{59 \times 6.400\ km}{\cos(89,855)} = 150 \cdot 10^6\ km$$

$$\boxed{L_{TO} = 150 \cdot 10^6\ km}$$