

$$F_{1/2} = F_{2/1} = F$$

$$M_1 = F \cdot \rho_1$$

$$M_2 = F \cdot \rho_2$$

$$v = \omega_1 r_1 = \omega_2 r_2$$

$$i = \frac{\omega_1}{\omega_2} = \frac{r_2}{r_1}$$

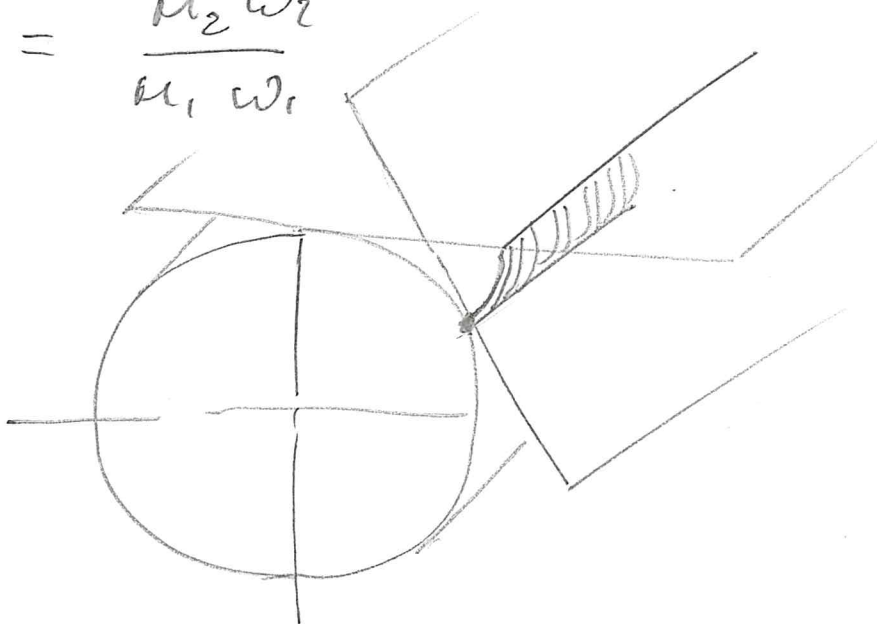
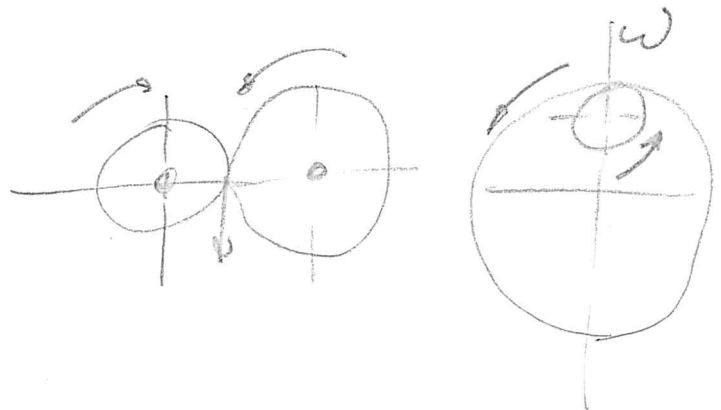
$$\Phi = \frac{2\pi r_1}{z_1} = \frac{2\pi r_2}{z_2}$$

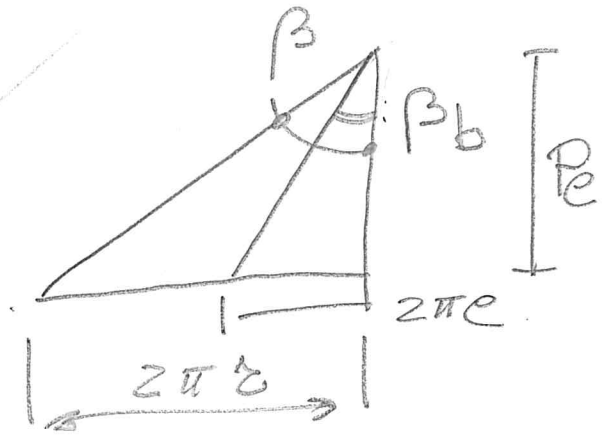
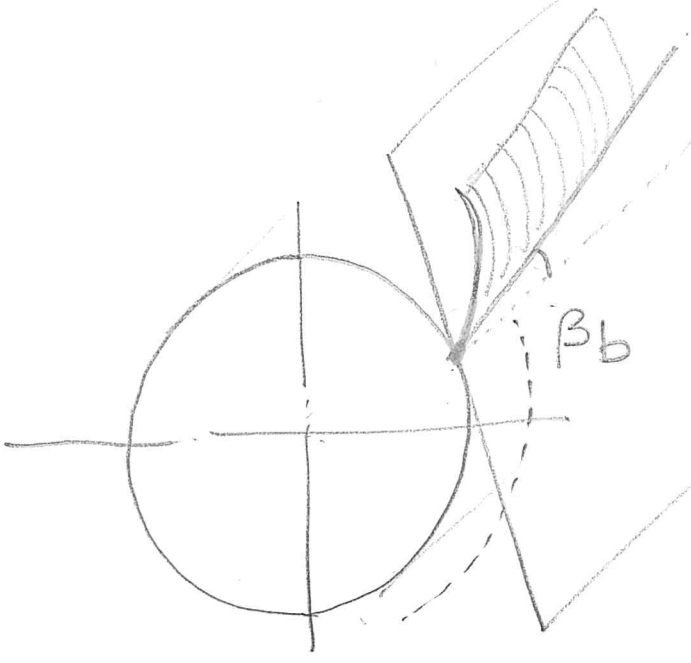
$$i = \frac{z_2}{z_1}$$

$$i < 0$$

$$i > 0$$

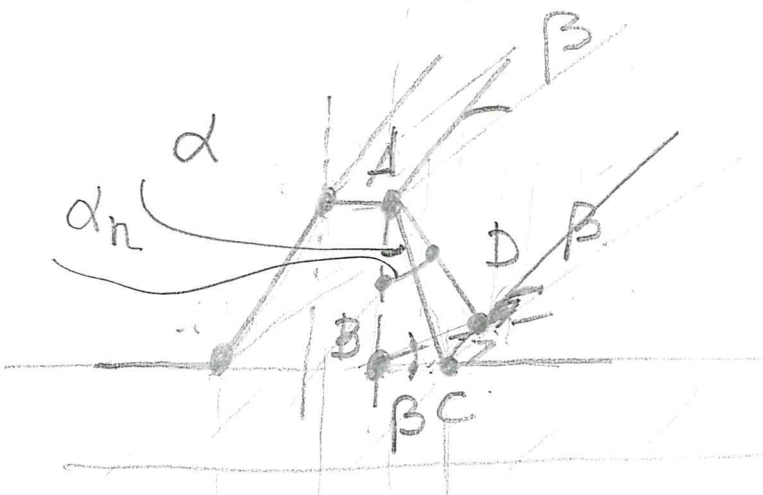
$$\eta = \frac{M_2 \omega_2}{M_1 \omega_1}$$





$$2\pi r = P_e \tan \beta$$

$$2\pi r_e = P_e \tan \beta_b$$



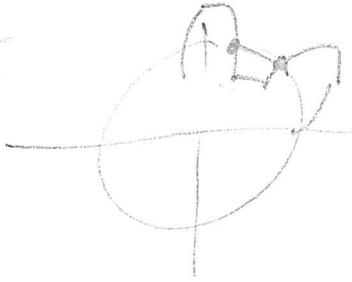
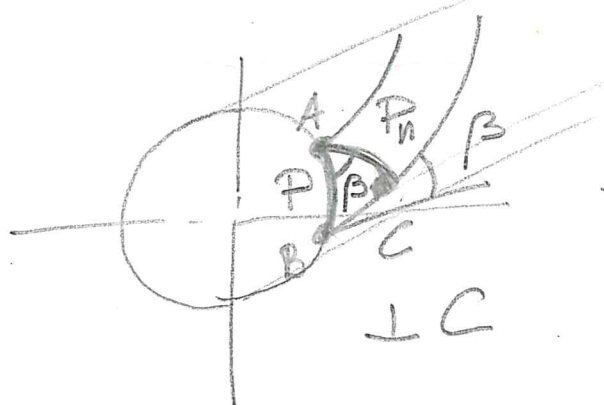
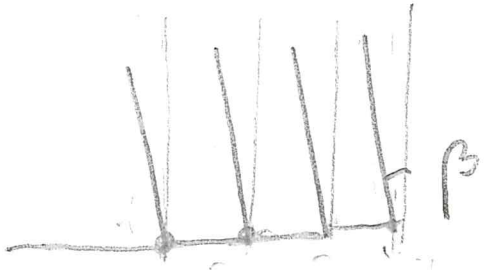
$$BD = AB \tan \alpha_n$$

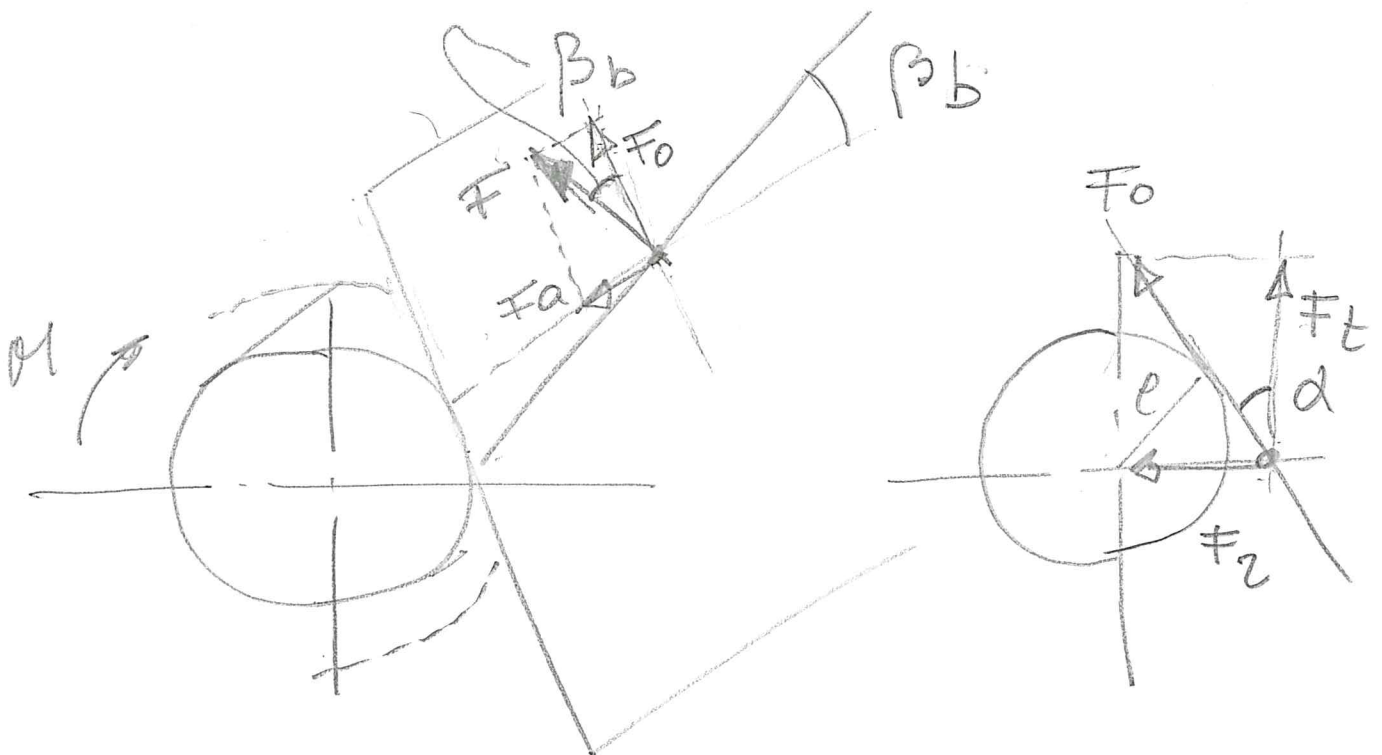
$$BC = AB \tan \alpha$$

$$BD = BC \cos \beta$$

$$\tan \alpha_n = \tan \alpha \cos \beta$$

$$P_m = P \cos \beta$$





$$F_a = F \sin \beta_b$$

$$F_t = F_0 \cos d$$

$$F_0 = F \cos \beta_b$$

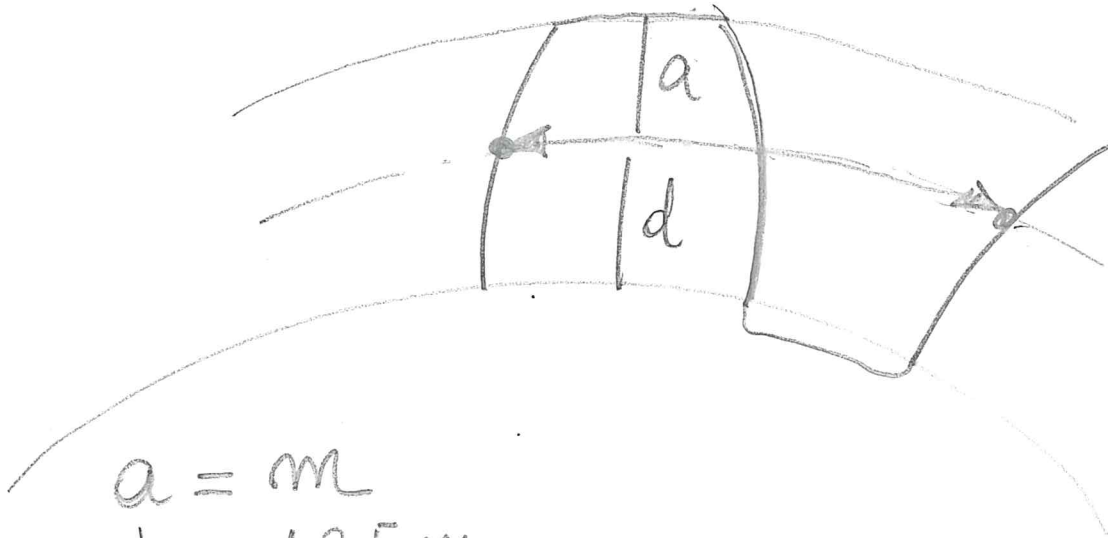
$$F_2 = F_0 \sin d$$

$$M_1 = F_0 e_1 = F_0 e_1 \cos \beta_b$$

$$M_2 = F_0 e_2$$

$$P = \frac{2\pi r}{\lambda} \quad P = \frac{2r}{\lambda} = m$$

$$m = 0,5 \quad 0,6 \quad \dots \quad 3, 4, \dots \quad 16 \dots$$



$$a = m$$

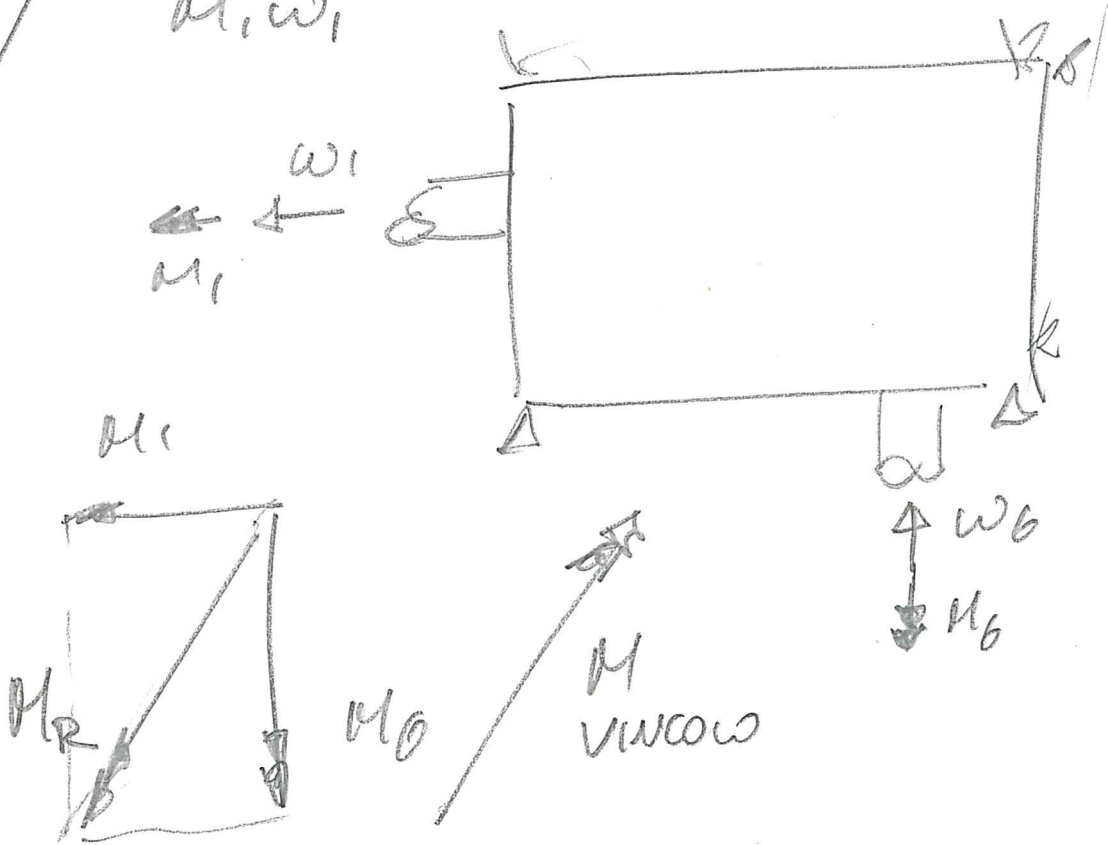
$$d = 1,25m$$

# Rotismi

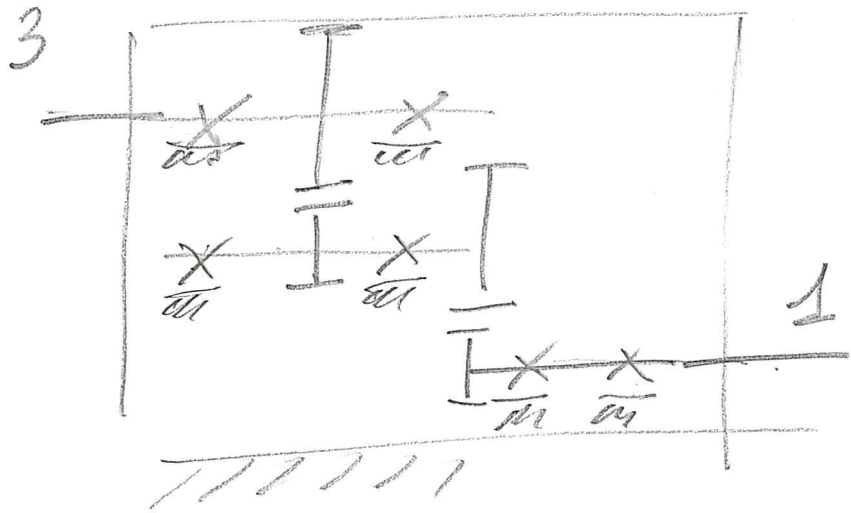
$$z' = \frac{\omega_1}{\omega_6} = \left( \frac{\omega_1}{\omega_{2,3}} \right) \cdot \frac{\omega_{2,3}}{\omega_{4,5}} \cdot \frac{\omega_{4,5}}{\omega_6} =$$

$$= \frac{z_2}{z_1} \cdot \frac{z_4}{z_3} \cdot \frac{z_6}{z_5}$$

$$\gamma = \frac{M_0 \omega_6}{a_1 \omega_1}$$



# ROTEIRO ORDINARIO

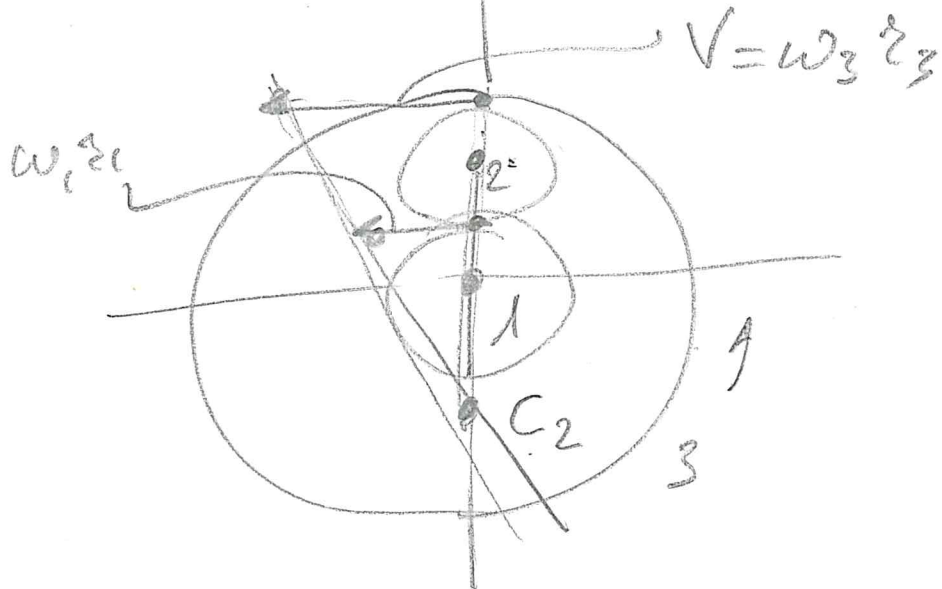
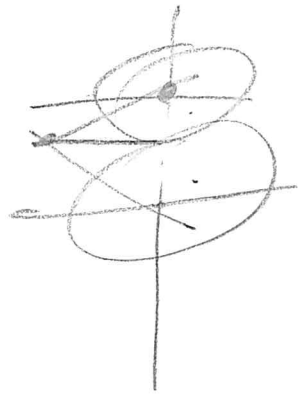
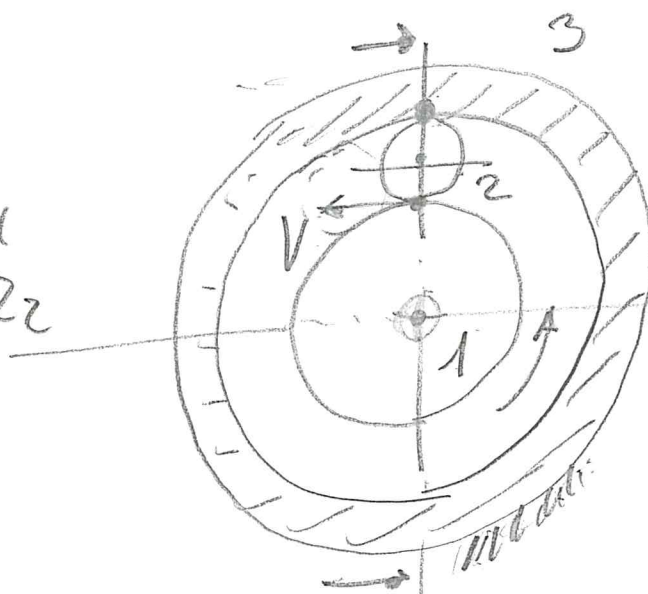


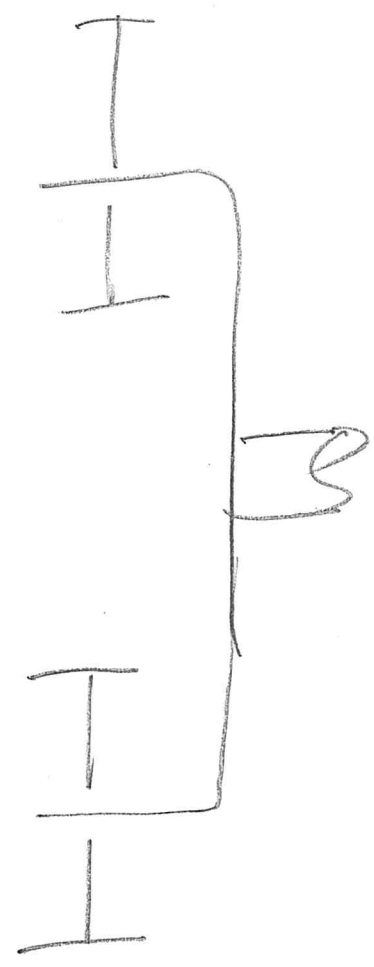
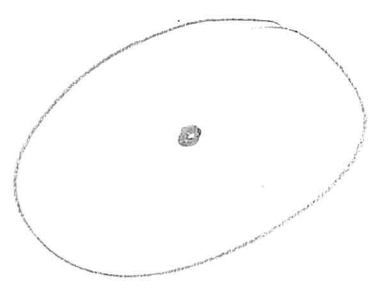
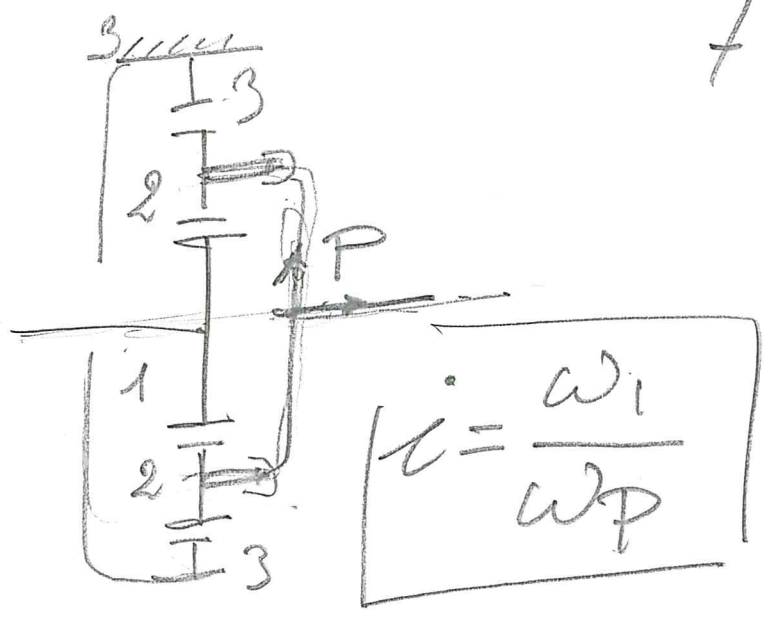
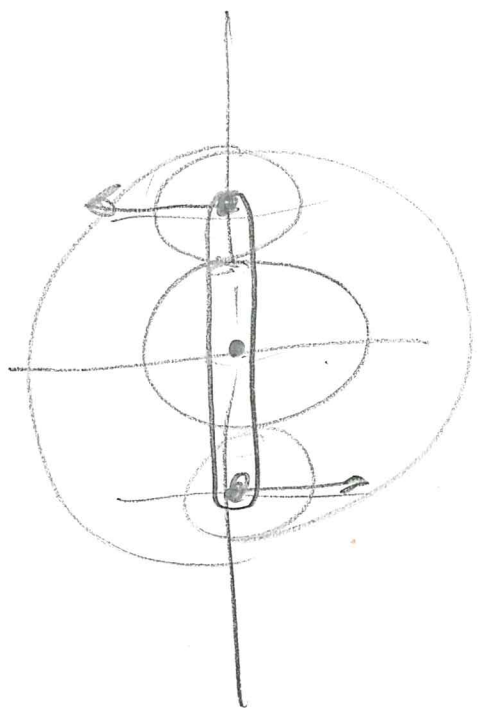
## ROTEIRO EPICICLOIDAL

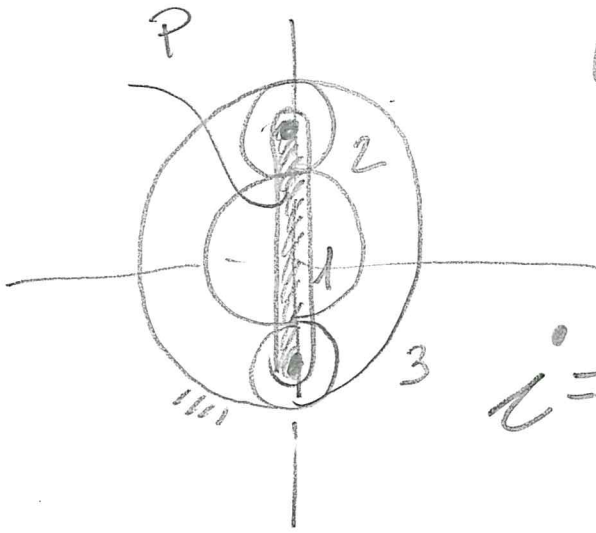
$$\omega_3 = 0$$

$$V = \omega_1 r_1$$

$$V = \omega_2 r_2$$

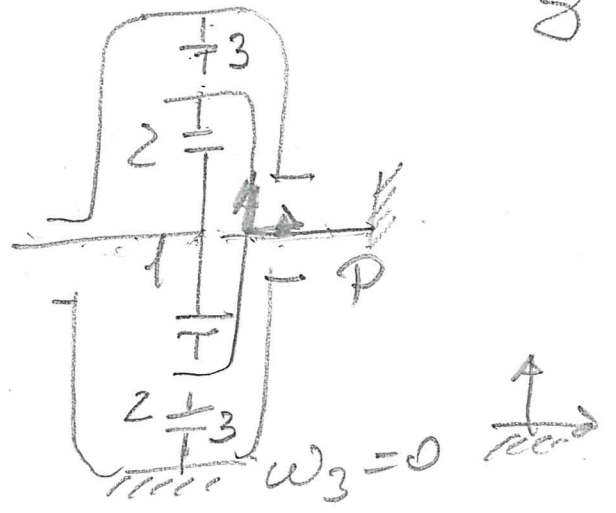






$\omega_3 = 0$

$i = \frac{\omega_1}{\omega_3}$



$\omega_1, \omega_2, \omega_3, \omega_P$

$(\omega_1 - \omega_P) \quad \omega_2 - \omega_P \quad \omega_3 - \omega_P \quad \omega_P - \omega_P = 0$

$$\tau = \frac{\omega_1 - \omega_P}{\omega_3 - \omega_P} = \begin{pmatrix} z_2 \\ -z_1 \end{pmatrix} \begin{pmatrix} z_3 \\ z_2 \end{pmatrix} = \tau$$

$$\frac{\omega_1 - \omega_P}{-\omega_P} = \tau$$

NOT  $\rightarrow 1$   $\omega_T \rightarrow P$

$$\frac{\frac{\omega_1}{\omega_P} - 1}{-1} = \tau$$

$$i = \frac{\omega_1}{\omega_P} = 1 - \tau$$

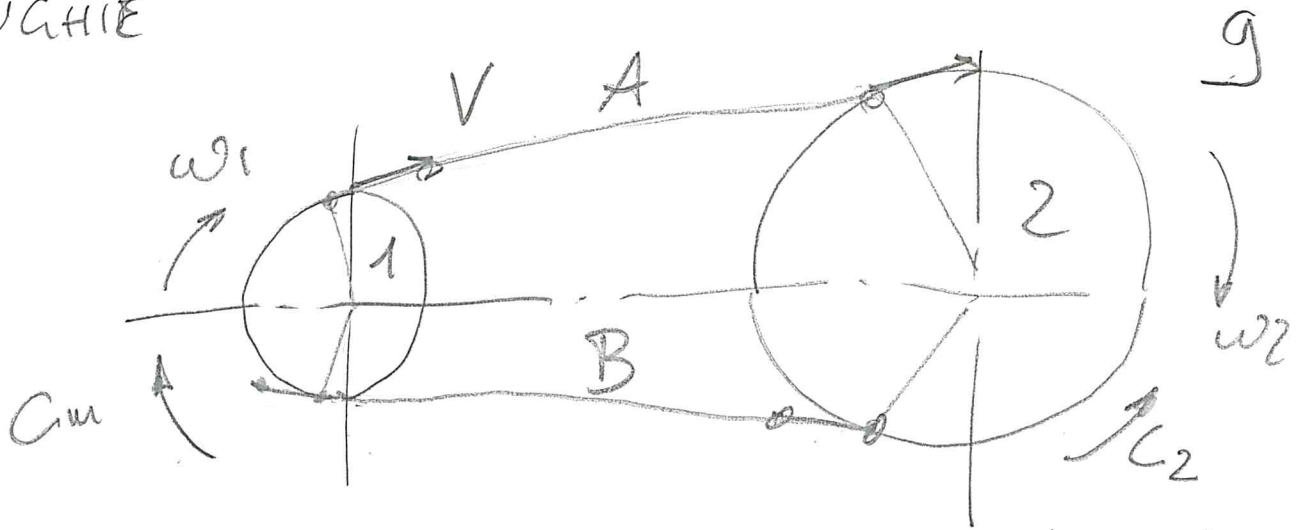
NOT  $\rightarrow P$   $\omega_T \rightarrow 1$

$$i = \frac{\omega_P}{\omega_1} = \frac{1}{1 - \tau}$$

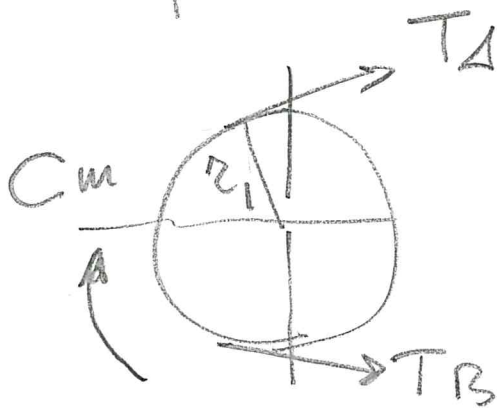
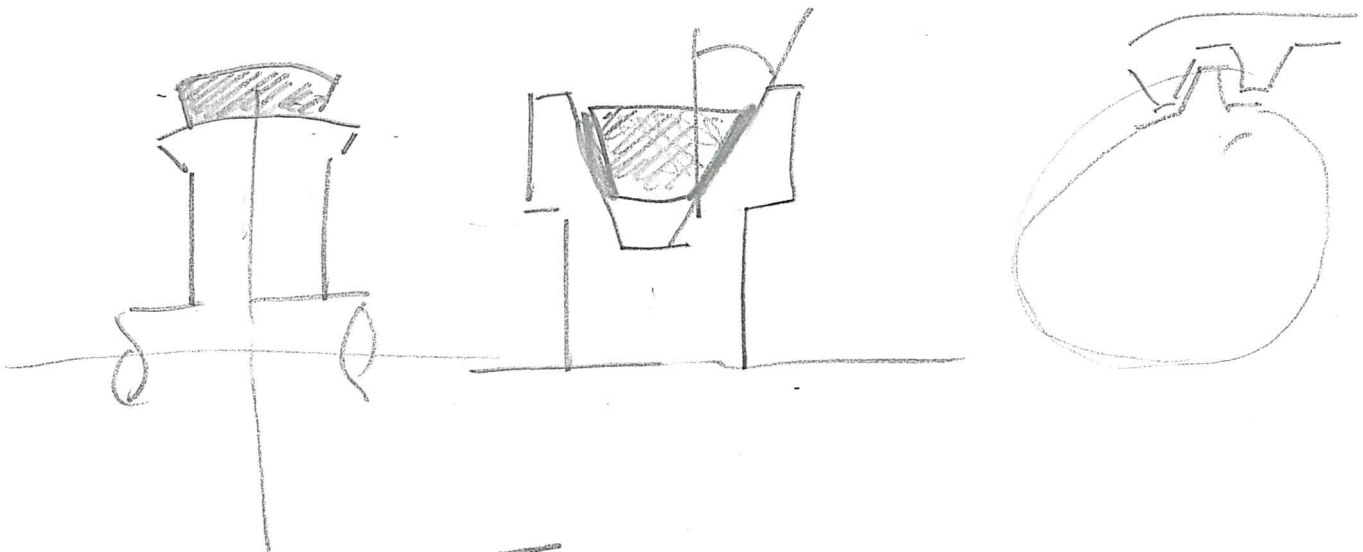
WILLIS



# CINGHIE

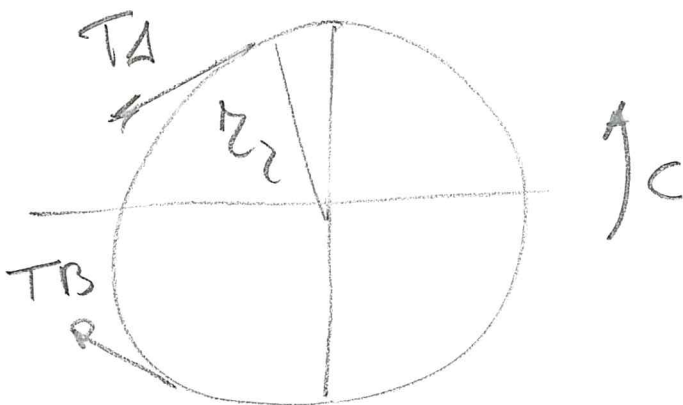


$$V = \omega_1 r_1 = \omega_2 r_2 \quad i = \frac{\omega_1}{\omega_2} = \frac{r_2}{r_1}$$

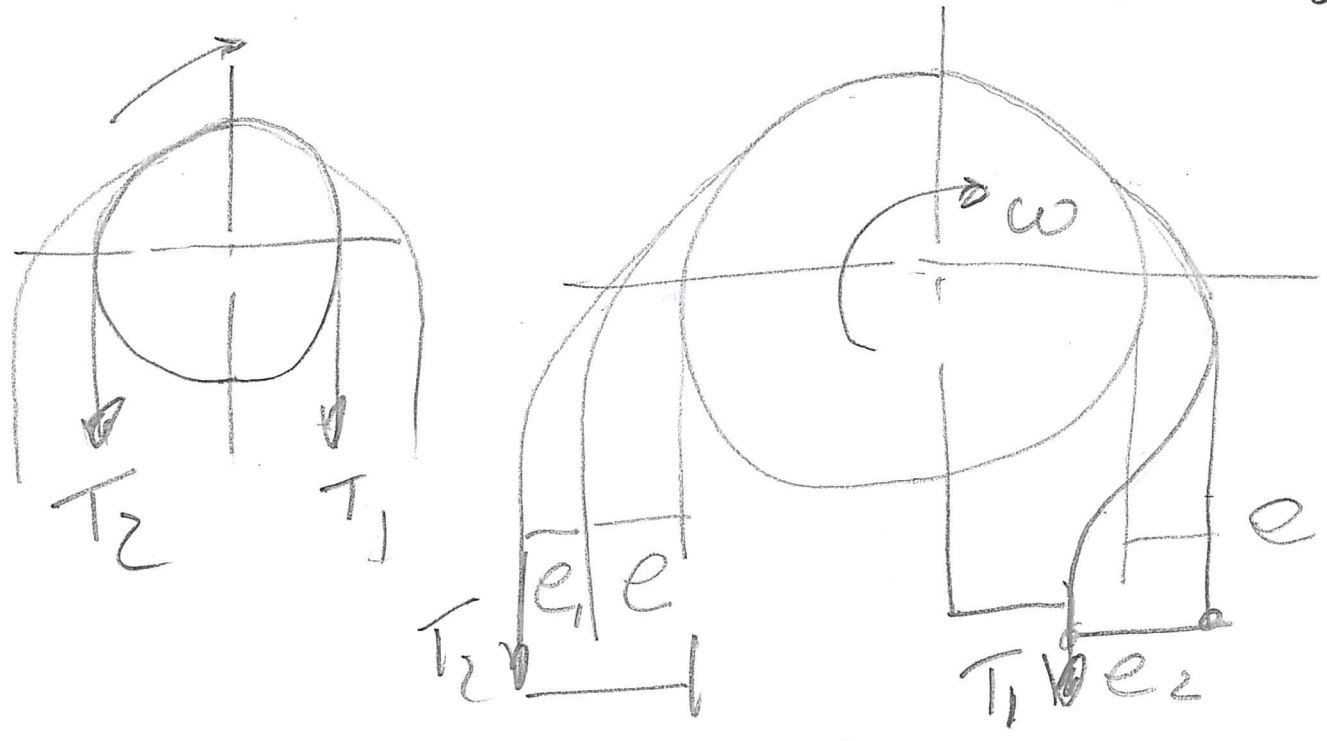


$$C_m = (T_B - T_A) r_1$$

$$C_2 = (T_B - T_A) r_2$$



$$\eta = \frac{C_2 \omega_2}{C_1 \omega_1}$$



$e$  SCOTTIAMENTO ELASTICO  
 $e_1$  " ANELASTICO INCREMENTO  
 $e_2$  " " " " USCITA