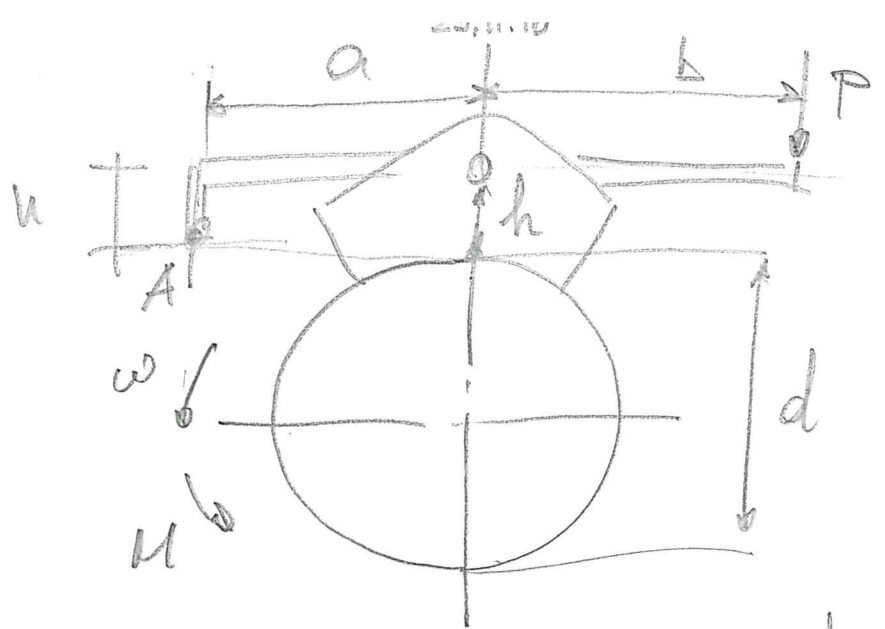


$P = 100 \text{ N}$
 $a = 0,15 \text{ m}$
 $b = 0,30 \text{ m}$
 $h = 0,05 \text{ m}$
 $d = 0,22 \text{ m}$
 $f = 0,4$

$z_T = \frac{d}{2}$



$0,0_2 = z_T + h$

$\epsilon = \arcsin \frac{e}{z_T + h}$

$\epsilon = 14,85^\circ$



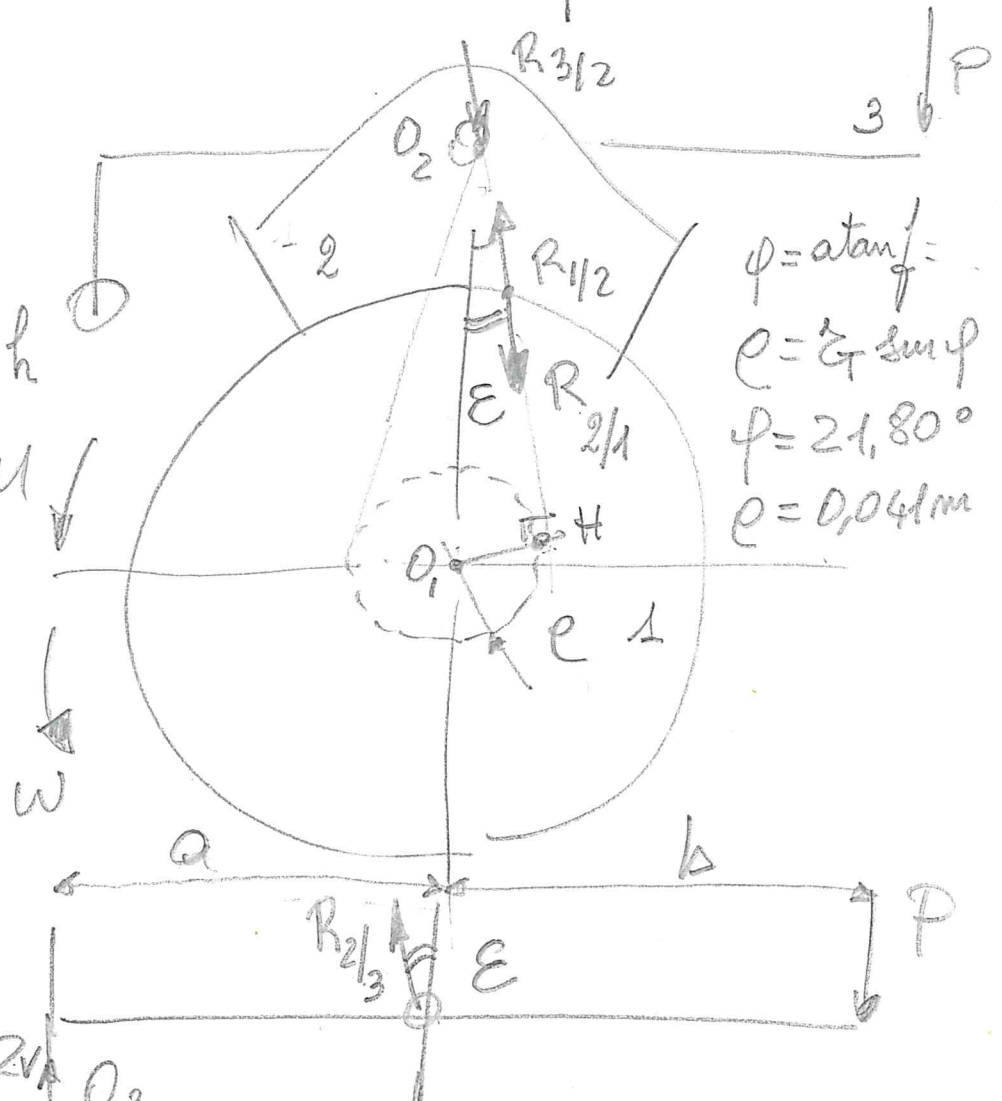
$a R \cos \epsilon + h R \sin \epsilon - P(a+b) = 0$; $R(a \cos \epsilon + h \sin \epsilon) = P(a+b)$

$R = \frac{P(a+b)}{(a \cos \epsilon + h \sin \epsilon)} = \frac{100(0,15+0,30)}{(0,15 \cos 14,85 + 0,05 \sin 14,85)}$

$R = 285,16 \text{ N}$

$M = R \cdot \rho = 285,16 \cdot 0,041 \text{ m} = 11,69 \text{ Nm}$

$R_0 - R \sin \epsilon = 0$; $R_0 = R \sin \epsilon = 73,08 \text{ N}$; $R_v + R \cos \epsilon - P = 0$; $R_v = -175,51 \text{ N}$



$\phi = \arctan f =$
 $\rho = z_T \sin \phi$
 $\phi = 21,80^\circ$
 $\rho = 0,041 \text{ m}$

$$M = 150 \text{ Nm}$$

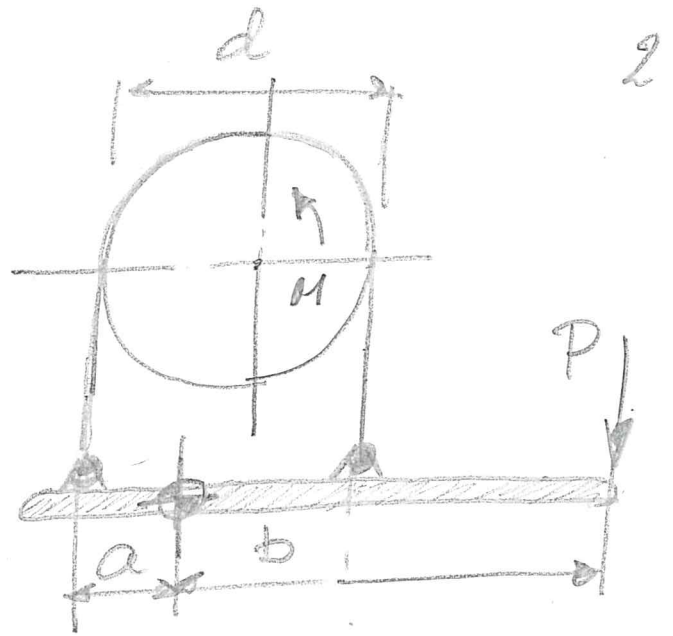
$$a = 0,125 \text{ m}$$

$$b = 0,650 \text{ m}$$

$$d = 0,450 \text{ m} \quad z_T = \frac{d}{2}$$

$$f_a = 0,2$$

$$P_{\text{MIN}} ?$$

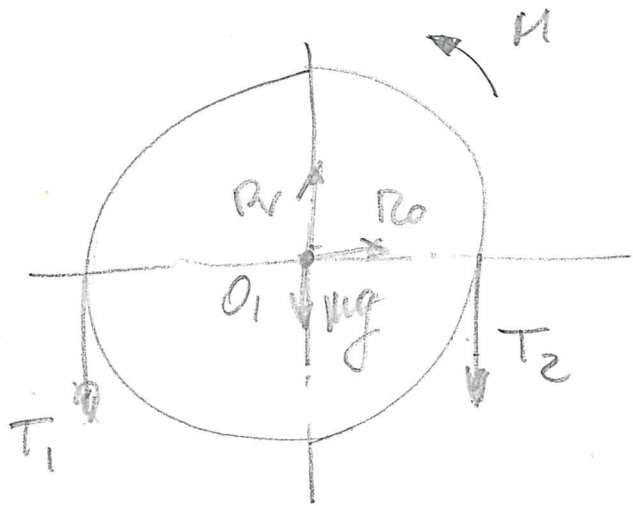


M AMORADO

$$O_1) \quad M + T_1 z_T - T_2 z_T = 0$$

$$O_2) \quad -T_1 a + T_2 (d-a) - P b = 0$$

$$\frac{T_2}{T_1} = e^{f_a \theta^*}; \quad \theta^* = \pi \text{ rad}$$



$$T_2 = T_1 \cdot 1,87$$

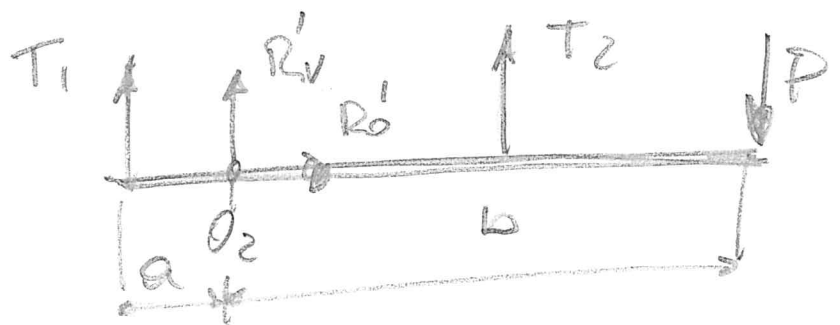
$$-T_1 z_T + T_1 \cdot 1,87 z_T = M$$

$$T_1 z_T (1,87 - 1) = M$$

$$T_1 = \frac{M}{0,87 \cdot z_T} = \frac{150}{0,87 \cdot 0,225} = 766,28 \text{ N}$$

$$T_2 = 1432,95 \text{ N}$$

$$P = \frac{1}{b} [T_2 (d-a) - T_1 a] = \frac{1}{0,65} [1432,95 (0,45 - 0,125) - 766,28 \cdot 0,125] = 569,11 \text{ N}$$



$$\sum \vec{O}_1) - M - T_1 \cdot 2r + T_2 \cdot 2r = 0$$

$$\sum \vec{O}_2) - T_2 \cdot a + T_1(d-a) - P \cdot b = 0$$

$$\frac{T_2}{T_1} = e^{f \cdot \theta}$$

$$T_2 = 1,87 T_1$$

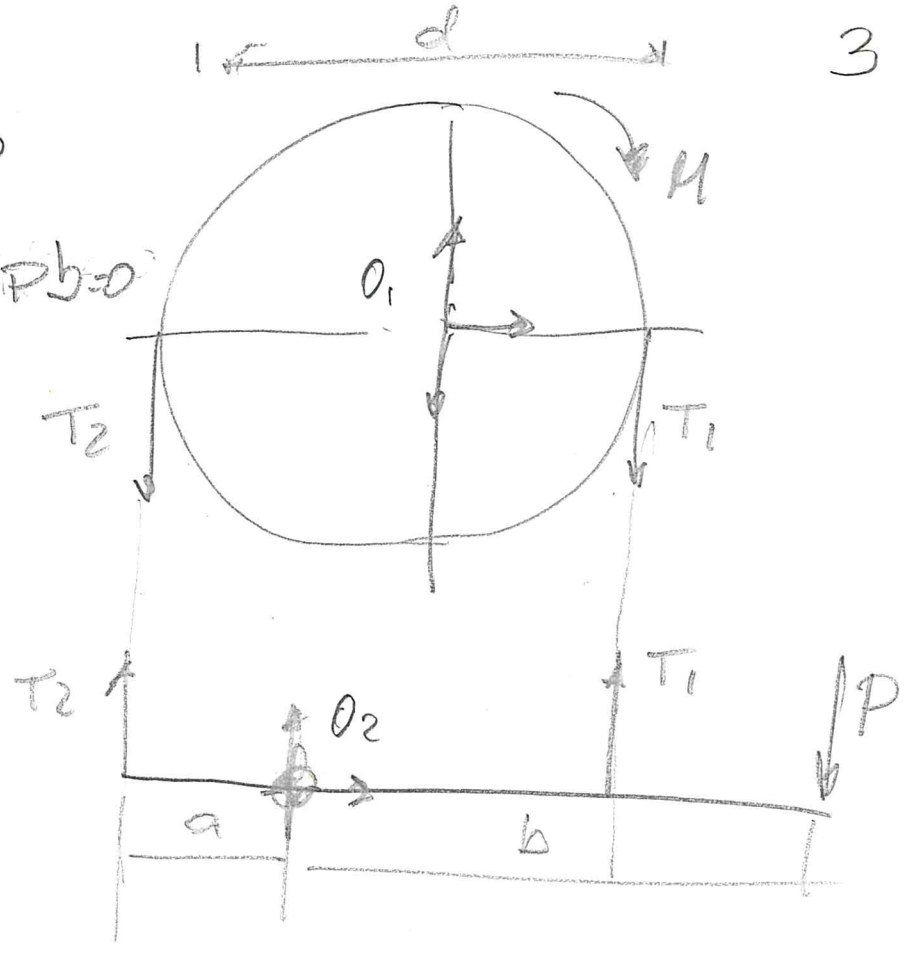
$$M = -T_1 \cdot 2r + 1,87 T_1 \cdot 2r$$

$$T_1 \cdot 2r \cdot 0,87 = M$$

$$T_1 = 766,28 \text{ N}$$

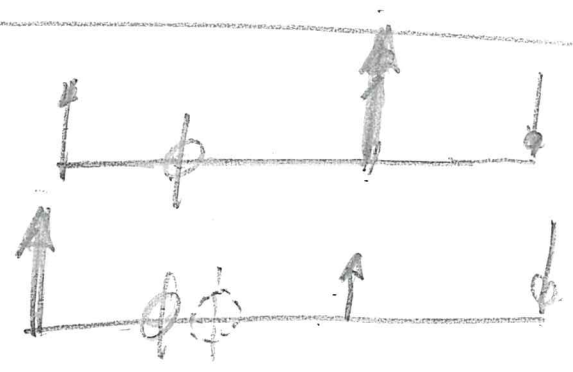
$$T_2 = 1432,95 \text{ N}$$

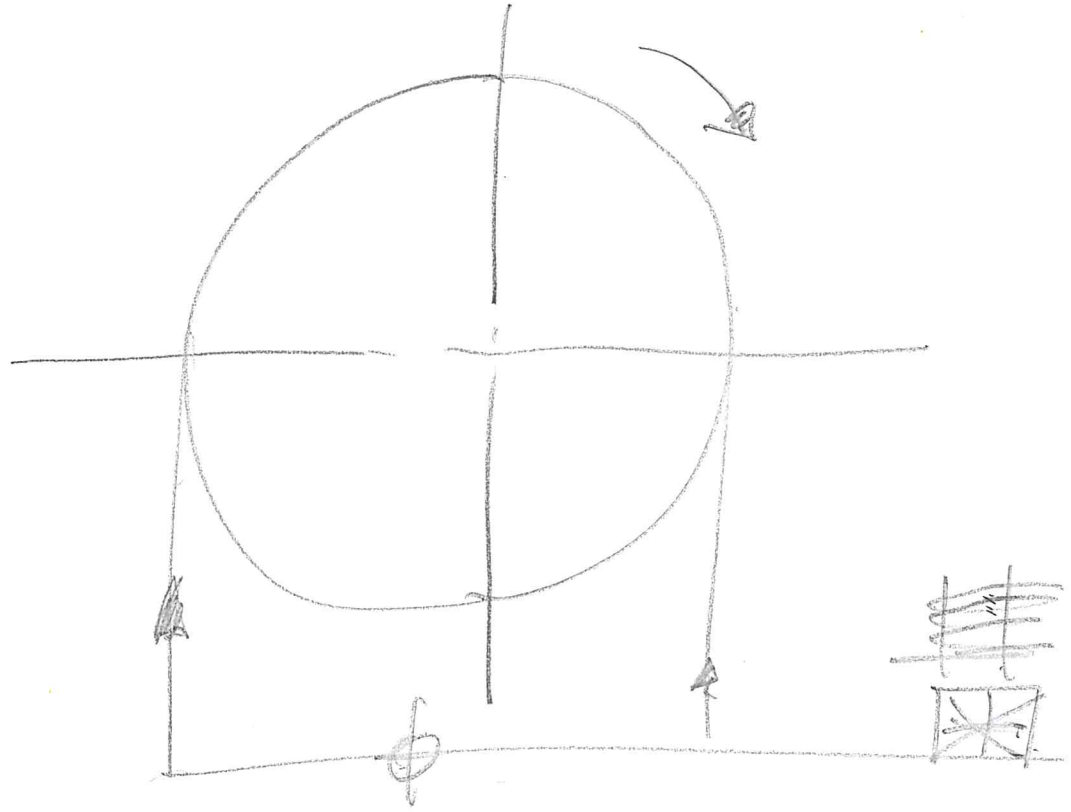
$$P = \frac{1}{b} [T_1(d-a) - T_2 a] = \frac{1}{0,65} [766,28 \cdot (0,45 - 0,125) - 1432,95 \cdot 0,125] = 107,63 \text{ N}$$

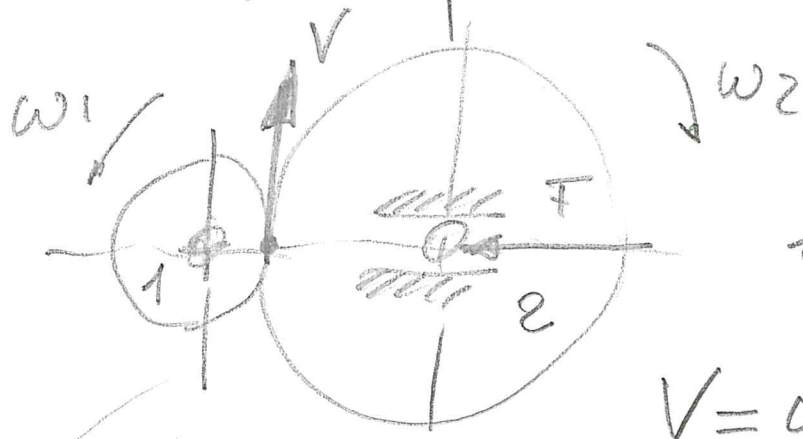
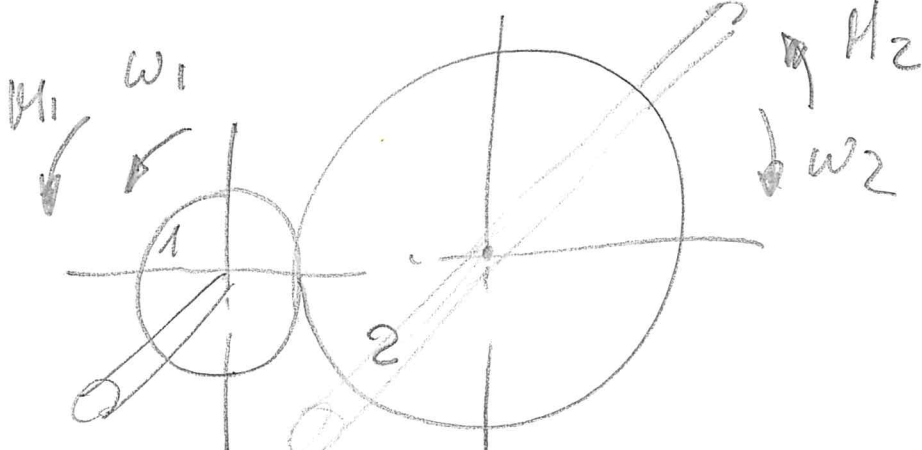
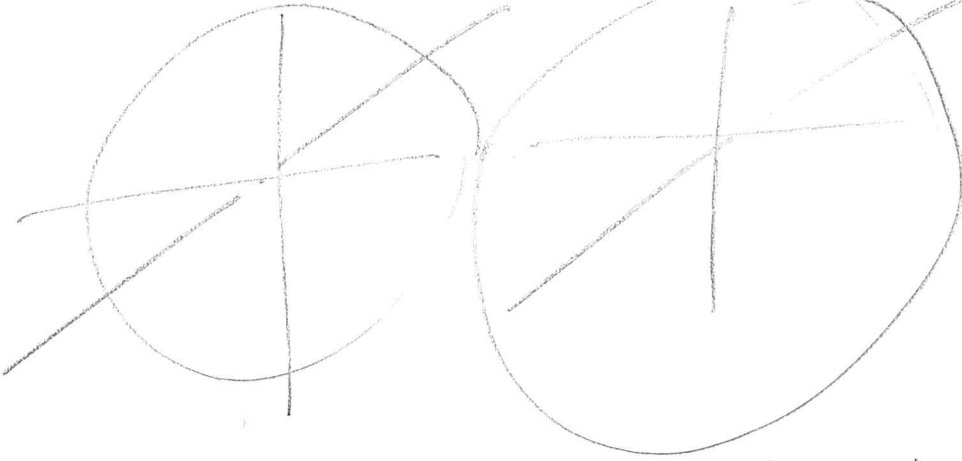


M. ALTERNATIVO

M. ORIGINAL



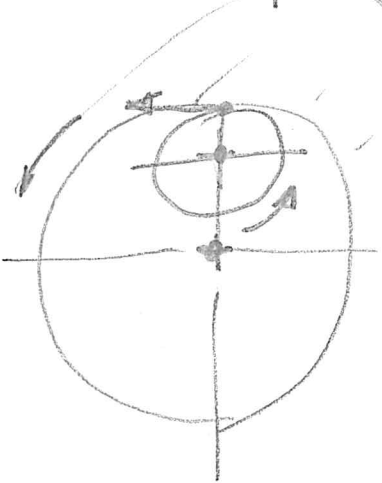


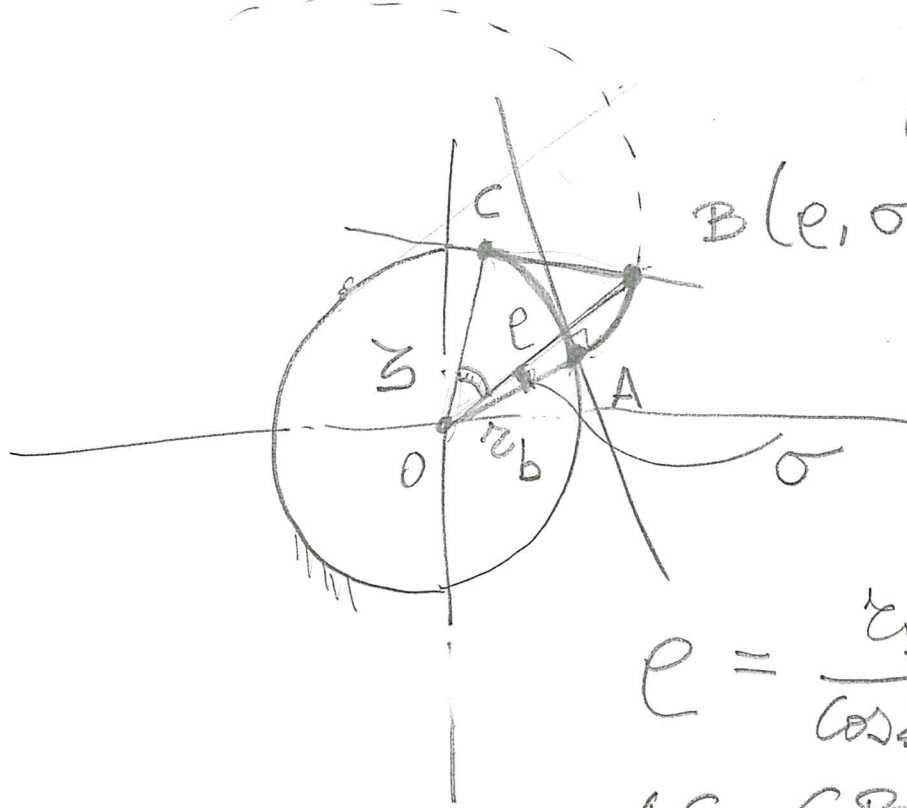


$$i = \frac{\omega_1}{\omega_2}$$

$$V = \omega_1 r_1 = \omega_2 r_2$$

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





$e = OB$ 6

$B(e, \sigma)$

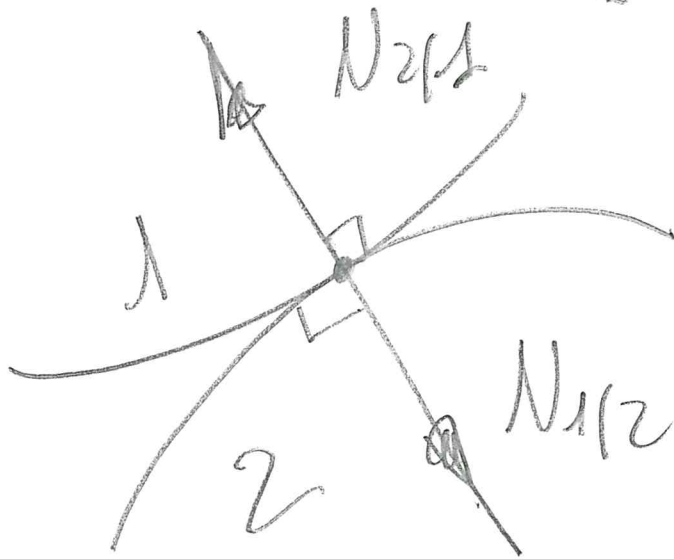
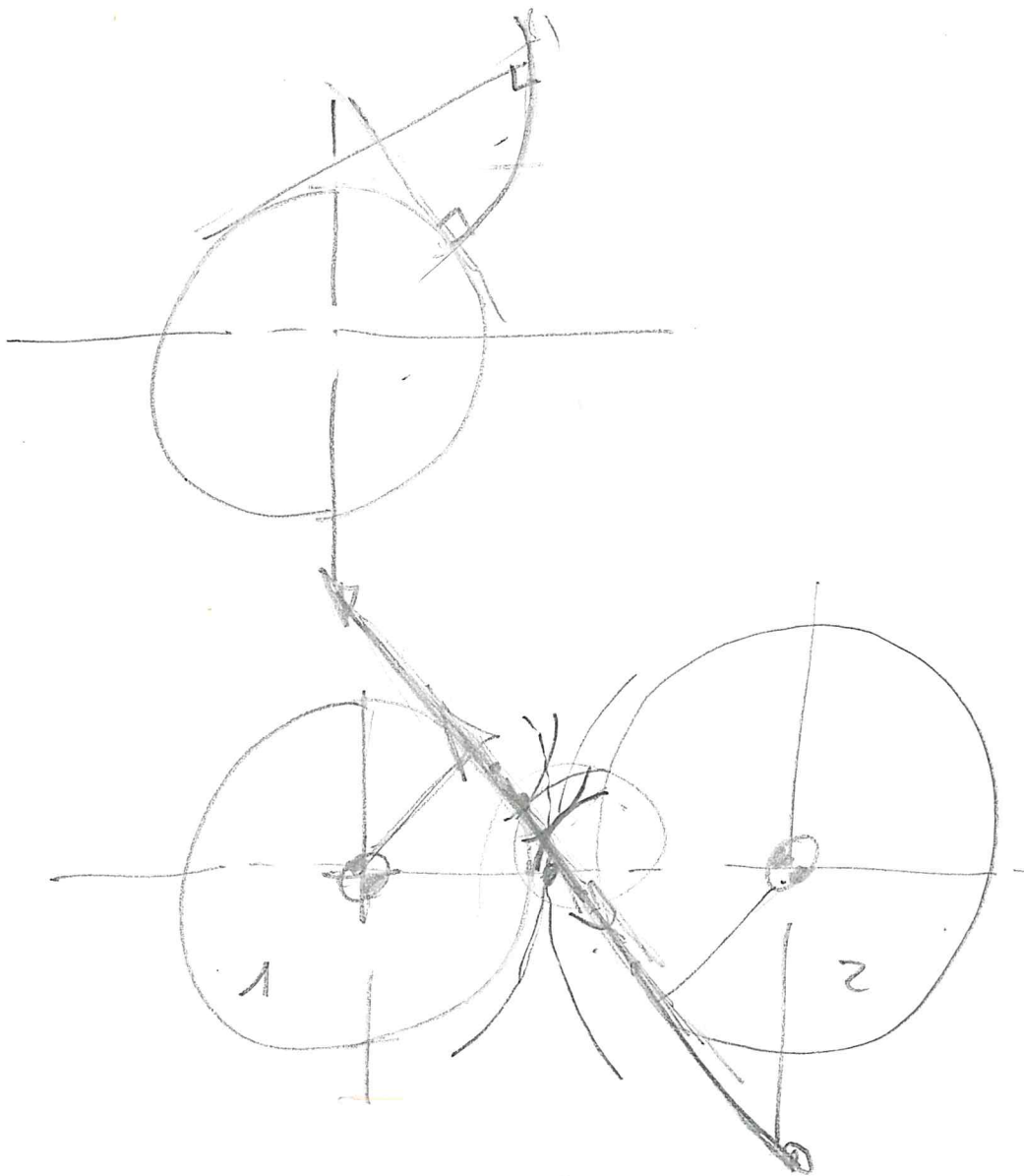
$$e = \frac{r_b}{\cos z}$$

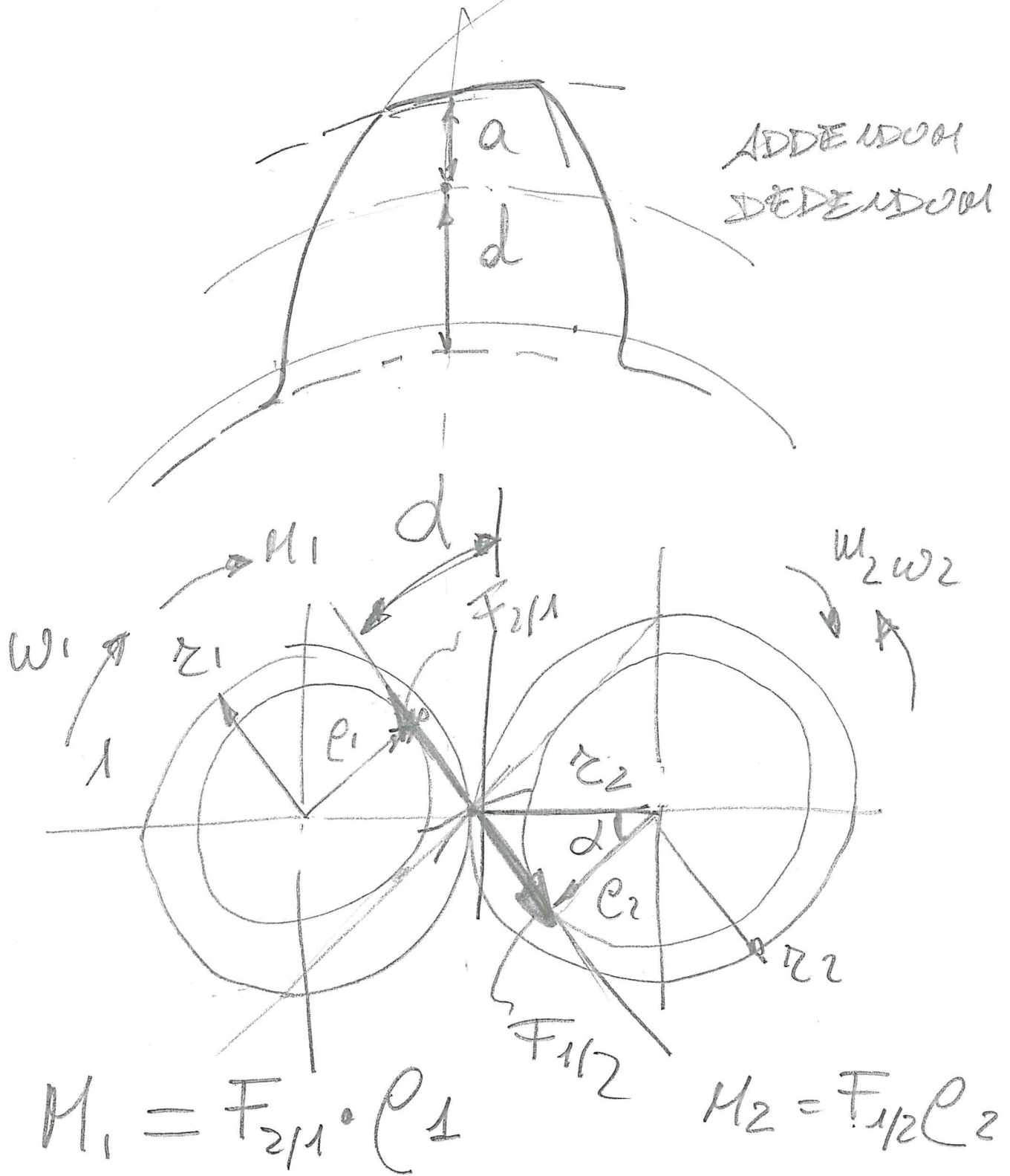
$$AC = CB = r_b(\sigma + z)$$

$$CB = r_b \operatorname{tg} z$$

$$r_b(\sigma + z) = r_b \operatorname{tg} z$$

$*$ $\sigma = \operatorname{tg} z - z$
 $**$ $e = r_b / \cos z$





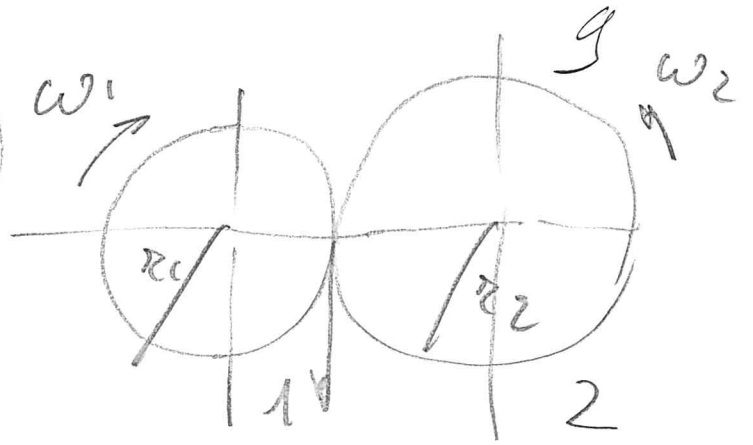
$$M_1 = F_{2/1} \cdot \rho_1$$

$$M_2 = F_{1/2} \rho_2$$

$$\rho = r \cos \alpha$$

$$\gamma = \frac{M_2 \omega_2}{M_1 \omega_1} = \frac{M_2}{M_1} \frac{1}{i}$$

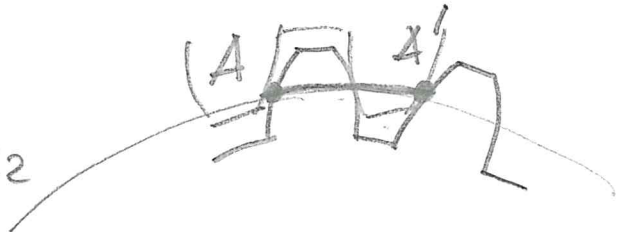
$$i = \frac{\omega_1}{\omega_2} = \frac{z_2}{z_1}$$



z_1 z_2

$$P_1 = P_2 = P$$

$$P = \frac{2\pi z_1}{z_1} = \frac{2\pi z_2}{z_2}$$



$$i = \frac{r_2}{r_1} = \frac{z_2}{z_1}$$