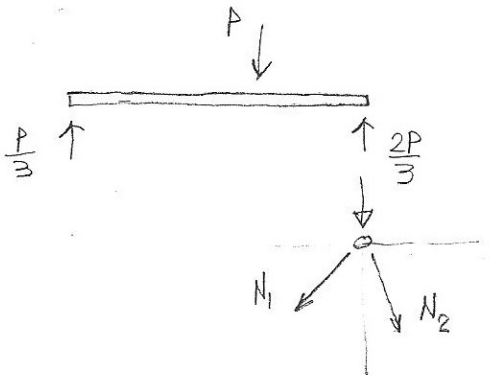
$\sigma_{ff} = 25 - 5\left(\frac{\lambda}{\lambda_{lim}}\right)^2 \quad (0 \le \lambda \le \lambda_{lim})$ $\qquad \lambda_{lim} = \pi\sqrt{\frac{E}{\sigma_p}} = 99,35$

ST : $\quad A = \pi(R_e^2 - R_i^2) = \pi(5^2 - 4,85^2) = 4,642\ cm^2$

$I = \frac{\pi}{4}(R_e^4 - R_i^4) = \frac{\pi}{4}(5^4 - 4,85^4) = 56,31\ cm^4$

$i = \sqrt{\frac{I}{A}} = 3,48\ cm$



$\rightarrow \quad N_1\frac{\sqrt{2}}{2} = N_2\frac{1}{2} \Rightarrow N_1 = \frac{\sqrt{2}}{2}N_2$

$\downarrow \quad \frac{2P}{3} + N_1\frac{\sqrt{2}}{2} + N_2\frac{\sqrt{3}}{2} = 0$

$\frac{N_2}{2} + N_2\frac{\sqrt{3}}{2} = -\frac{2P}{3} \Rightarrow N_2 = -0,488P$

$N_1 = -0,345P$

Barra 1 $\quad \lambda_1 = \frac{l_{ff}}{i} = \frac{160}{3,48} = 45,98$

$\sigma_{ff} = 25 - 5\left(\frac{45,98}{99,35}\right)^2 = 23,93\ kN/cm^2$

$\overline{P} = \frac{\overline{N_1}}{0,345} = \frac{23,93 \times 4,642}{2 \times 0,345} = 160,9\ kN$

Barra 2 : $\quad \lambda_2 = \frac{l_{ff2}}{i} = \frac{320}{3,48} = 91,95$

$\sigma_{ff} = 25 - 5\left(\frac{91,95}{99,35}\right)^2 = 20,72\ \frac{kN}{cm^2}$

$\overline{P} = \frac{\overline{N_2}}{0,488} \quad \frac{20,72 \times 4,642}{2 \times 0,488} = 98,5\ kN$

$\boxed{\overline{P} = 98,5\ kN}$