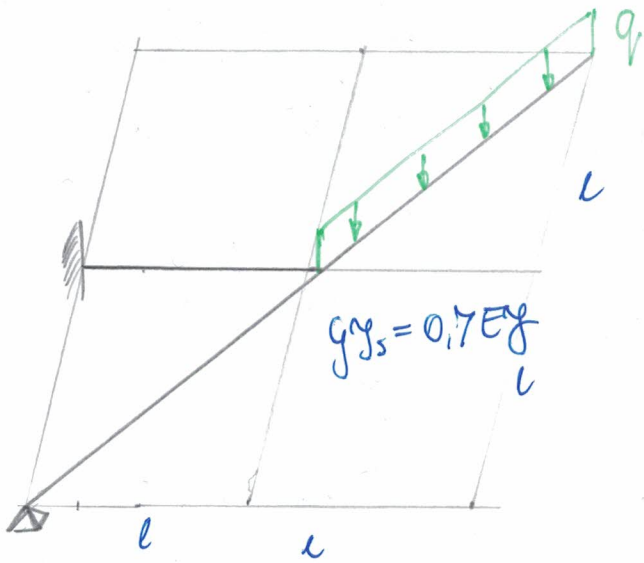
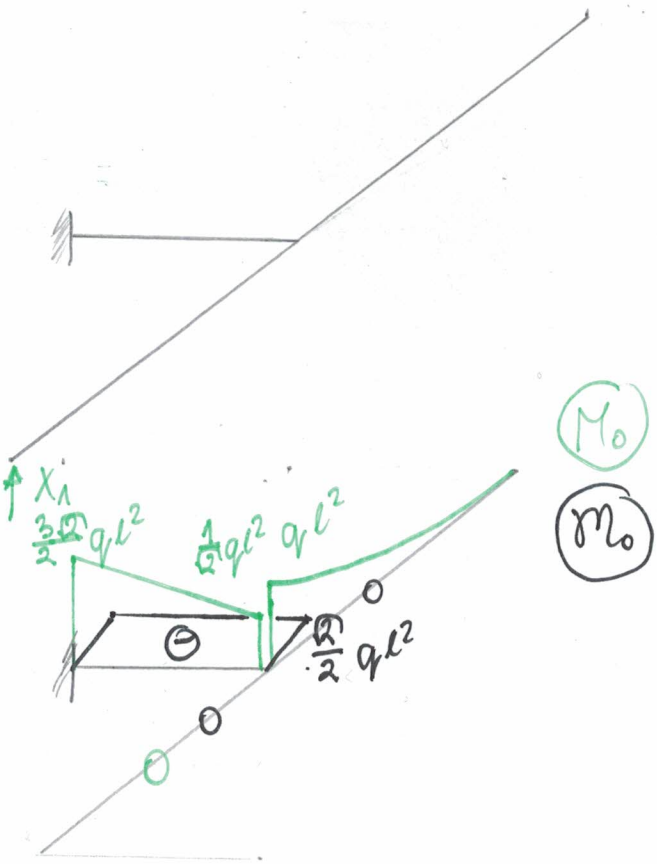
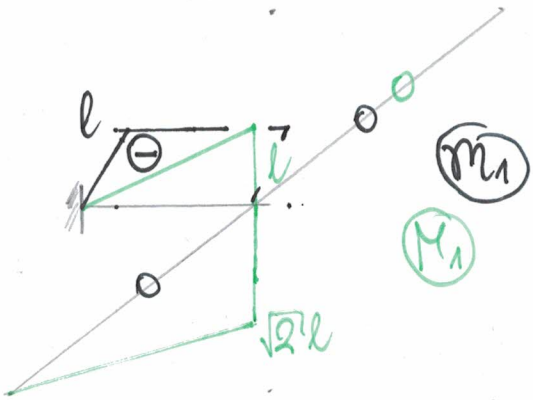
Kolokwium ZB NST II 21 IV 2018

USW







$$\delta_{11} = \frac{1}{E\gamma}\left[\frac{1}{2}\sqrt{2}l \cdot \sqrt{2}l \cdot \frac{2}{3}\sqrt{2}l + \frac{1}{2}l \cdot l \cdot l \cdot \frac{2}{3}l\right] + \frac{1}{0{,}7E\gamma}\left[l \cdot l \cdot l\right] = 2{,}705\,\frac{l^3}{E\gamma}$$

$$\delta_{10} = \frac{1}{E\gamma}\left[\frac{1}{2}l \cdot l \cdot \left(\frac{2}{3}\,\frac{\sqrt{2}}{2}\,ql^2 + \frac{1}{3}\,\frac{3\sqrt{2}}{2}\,ql^2\right)\right] + \frac{1}{0{,}7E\gamma}\left[l \cdot l \cdot \frac{\sqrt{2}}{2}ql^2\right] = 1{,}599\,\frac{ql^4}{E\gamma}$$

$$X_1 = -\frac{\delta_{10}}{\delta_{11}} = -0{,}591\,ql$$