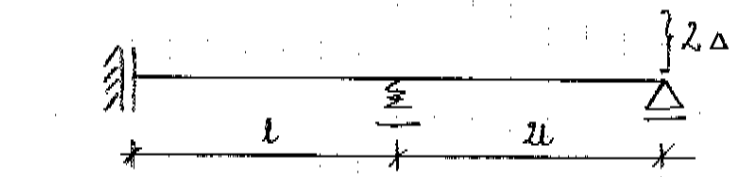
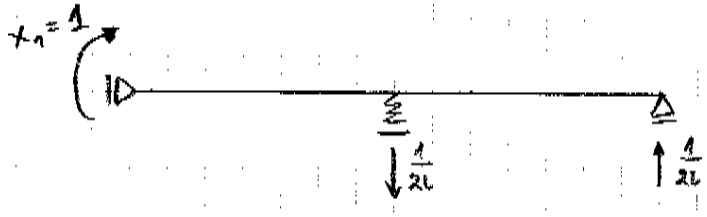
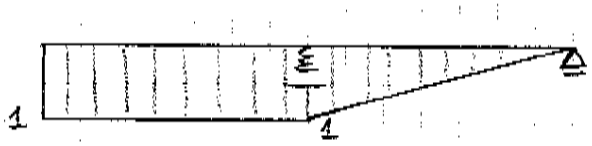
$k = \frac{3}{4}\frac{EJ}{l^3}$







$$\delta_{11} = \frac{1}{EJ}\left[1 \cdot l \cdot 1 + \frac{1}{2} \cdot 1 \cdot 2l \cdot \left(\frac{2}{3} \cdot 1\right)\right] + \frac{1}{\frac{3}{4}\frac{EJ}{l^3}} \cdot \frac{1}{2l} \cdot \frac{1}{2l} = 2\frac{l}{EJ}$$

$$\Delta_{1\Delta} = -\Sigma R \cdot \Delta = -\left(\frac{1}{2l} \cdot 2\Delta\right) = -\frac{\Delta}{l}$$

$$\delta_{11} \cdot x_1 + \Delta_{1\Delta} = 0$$

$$x_1 = -\frac{\Delta_{1\Delta}}{\delta_{11}} = \frac{1}{2}\frac{\Delta EJ}{l^2}$$