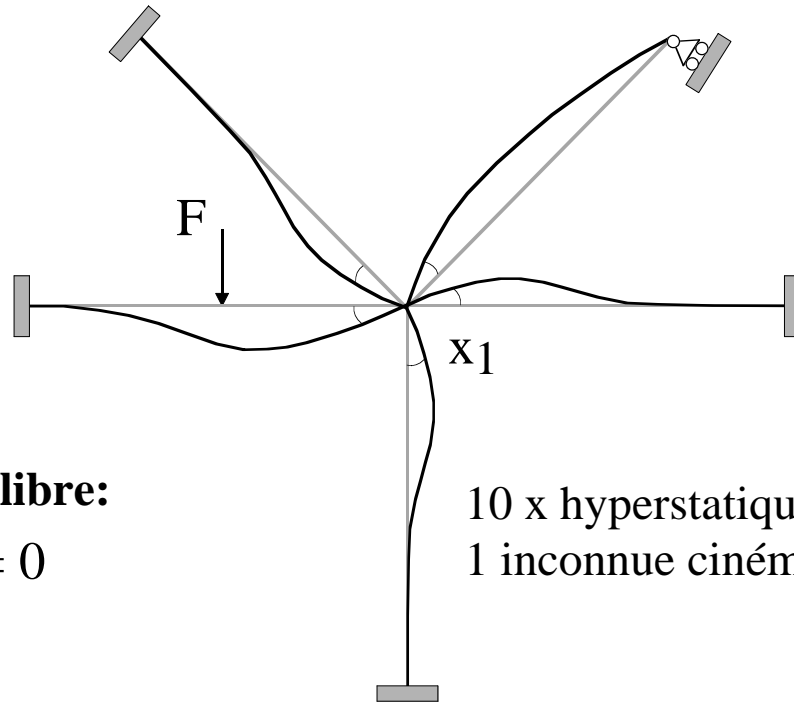


Généralisation:

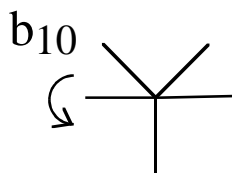


condition d'équilibre:

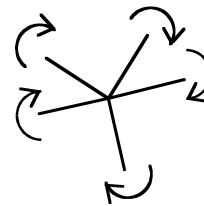
$$b_{10} + b_{11} \cdot x_1 = 0$$

10 x hyperstatique
1 inconnue cinématique

coefficients:



$$b_{11} = \sum k_i$$



détermination de l'inconnue cinématique: $x_1 = - \frac{b_{10}}{\sum k_i}$

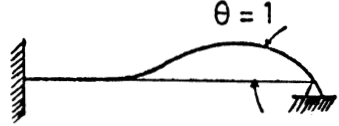
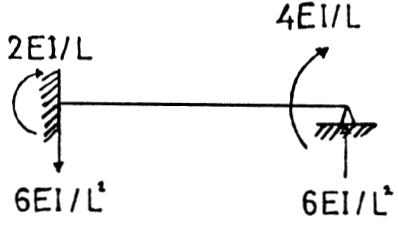
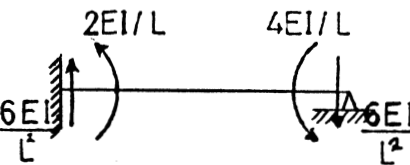
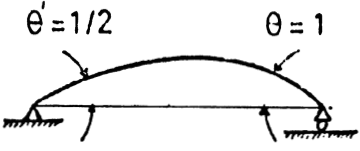
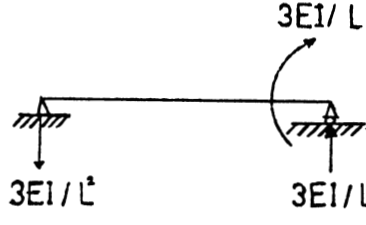
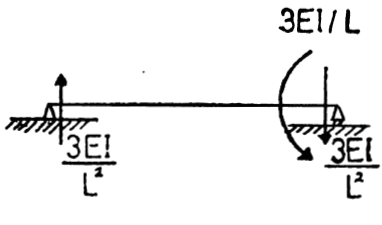

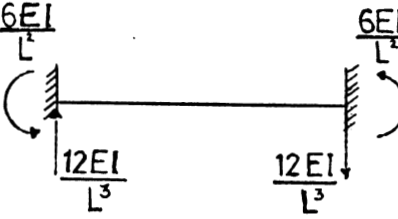
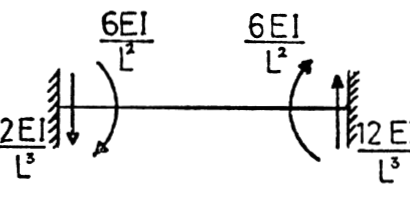
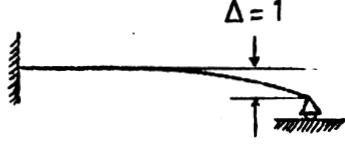
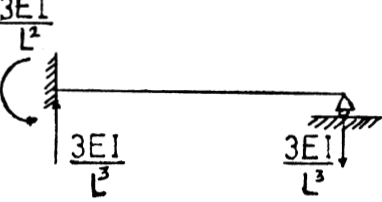
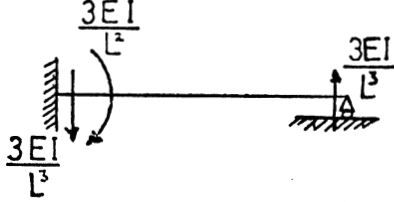
moments dans les barres non chargées aboutissant au noeud:

$$M_{\text{tot}} = M_0 + M_1 \cdot x_1 = 0 + k_i \cdot x_1 = b_{10} \cdot \frac{k_i}{\sum k_i}$$

la sollicitation des barres est donc **proportionnelle** à leur **rigidité**.

Relations déplacement-force

Cas fondamentaux:

<u>CAS DE DEPLACEMENT</u>	<u>FORCES EXTERIEURES ET REACTIONS D'APPUI</u>	<u>ACTIONS DE LA BARRE SUR LES NOEUDS</u>
 <p>$\theta = 1$</p>	 <p>$2EI/L$ $6EI/L^2$ $4EI/L$ $6EI/L^2$</p>	 <p>$2EI/L$ $6EI/L^2$ $4EI/L$ $6EI/L^2$</p>
 <p>$\theta' = 1/2$ $\theta = 1$</p>	 <p>$3EI/L^2$ $3EI/L^2$ $3EI/L$</p>	 <p>$3EI/L^2$ $3EI/L^2$ $3EI/L$</p>
 <p>$\Delta = 1$</p>	 <p>$6EI/L^2$ $12EI/L^3$ $6EI/L^2$ $12EI/L^3$</p>	 <p>$6EI/L^2$ $12EI/L^3$ $6EI/L^2$ $12EI/L^3$</p>
 <p>$\Delta = 1$</p>	 <p>$3EI/L^2$ $3EI/L^3$ $3EI/L^3$</p>	 <p>$3EI/L^2$ $3EI/L^3$ $3EI/L^3$</p>