

# 1 Método dos elementos finitos: Treliza Plana

## 1.1 Matrizes de rigidez dos elementos

$$k(0) = \begin{bmatrix} 70.7 & 47.1 & -70.7 & -47.1 \\ 47.1 & 31.4 & -47.1 & -31.4 \\ -70.7 & -47.1 & 70.7 & 47.1 \\ -47.1 & -31.4 & 47.1 & 31.4 \end{bmatrix}$$

$$k(1) = \begin{bmatrix} 0.0 & 0.0 & -0.0 & -0.0 \\ 0.0 & 184.1 & -0.0 & -184.1 \\ -0.0 & -0.0 & 0.0 & 0.0 \\ -0.0 & -184.1 & 0.0 & 184.1 \end{bmatrix}$$

## 1.2 Matriz de rigidez Global

$$K = \begin{bmatrix} 70.7 & 47.1 & -70.7 & -47.1 & 0.0 & 0.0 \\ 47.1 & 31.4 & -47.1 & -31.4 & 0.0 & 0.0 \\ -70.7 & -47.1 & 70.7 & 47.1 & 0.0 & 0.0 \\ -47.1 & -31.4 & 47.1 & 215.5 & 0.0 & -184.1 \\ 0.0 & 0.0 & 0.0 & 0.0 & 0.0 & 0.0 \\ 0.0 & 0.0 & 0.0 & -184.1 & 0.0 & 184.1 \end{bmatrix}$$