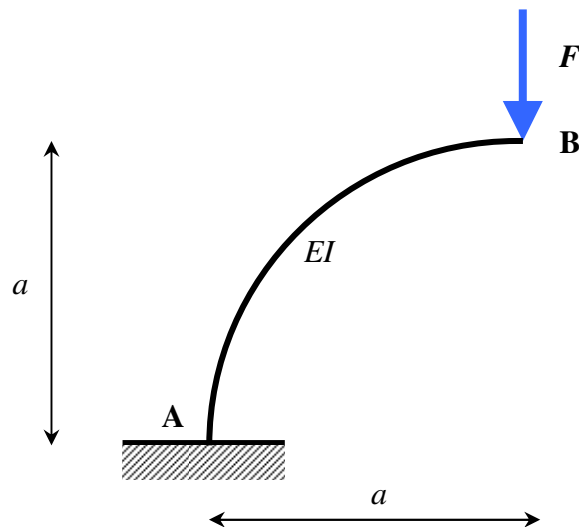


PROBLEM 2 : Work and Energy**(ca 40 min)**

A prismatic curved beam with radius a is loaded at B by a vertical concentrated load F . The bending stiffness is denoted with EI and the axial deformation is neglected.

**Questions:**

- Sketch the moment distribution (M -line) including the deformation sign and the extreme value of the bending moment expressed in F and a .
- Find the strain energy stored in this structure by bending.

HINT: Use polar coordinates

- Find the vertical displacement at B using Castigliano's theorem expressed in F , a and EI .