

# PROBLEM 1



Diagram illustrating a mechanical system. A horizontal beam is supported by a roller support on the left and a pin support on the right. A weight  $W$  is suspended from the beam at a distance  $x$  from the left support. A vertical force  $F$  is applied downwards at the right end of the beam. A curved arrow labeled  $M$  is shown at the right end, representing a moment.