A propped cantilever beam has a fixed support at the left end B and a roller support at the right end C. A constant line load p_0 acts along the length of the beam, along with a concentrated couple M_0 acting at end C.

  a) Draw a free body diagram of the beam (FBD).
  b) Write down the equilibrium equations for the beam from your FBD.
  c) Is the beam determinate or indeterminate? Explain.
  d) Use the superposition approach to determine the reaction at end C. Clearly indicate your choice of problems that go into your superposition model.
  e) Determine the reactions at end B on the beam.