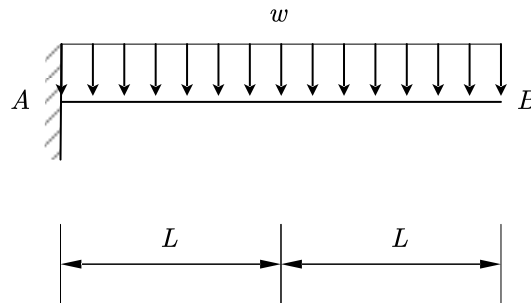


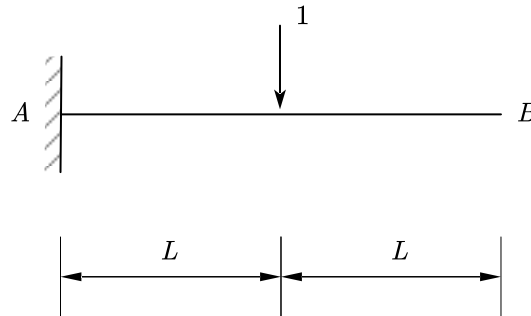
## Homework #4

**Problem 1:** For a cantilever beam shown below:



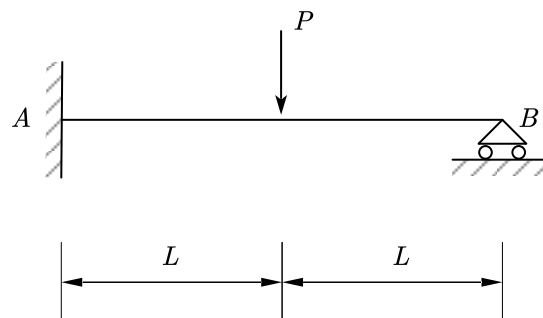
Use the *method of moment-area* to calculate the vertical displacement at point  $B$ , assuming the  $EI$  is constant along the beam.

**Problem 2** For a cantilever beam shown below:

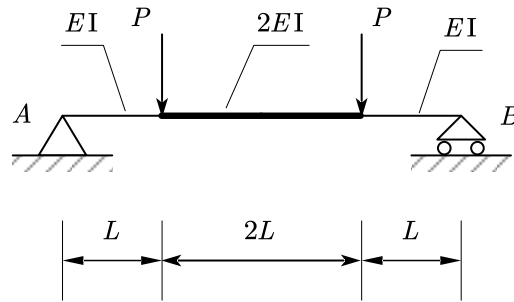


(1) Use the *method of moment-area* to calculate the vertical displacement at point  $B$ , assuming the  $EI$  is constant along the beam.

(2) Based on the results of (1), calculate the reaction force at point  $B$  for the following propped-cantilever beam, assuming the  $EI$  is constant along the beam:



**Problem 3** For a simple supported beam shown below:



- (1) Use the *method of moment-area* to calculate the rotation at point A.
- (2) Use the *method of moment-area* to calculate the vertical deflection at mid-span.