UNIVERSITY OF CALIFORNIA BERKELEY
Department of Civil Engineering
Spring 2011

Structural Engineering,
Mechanics and Materials
Professor: S. Govindjee

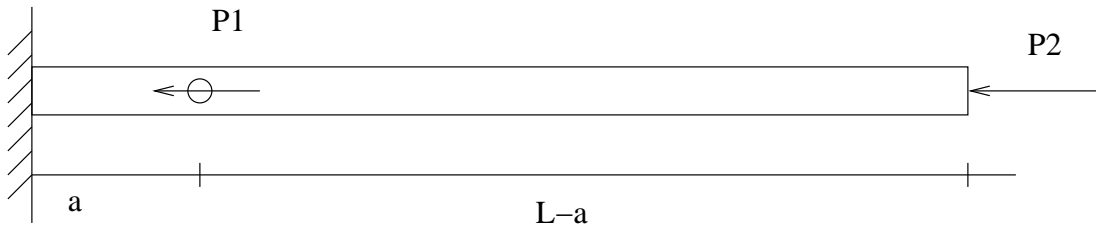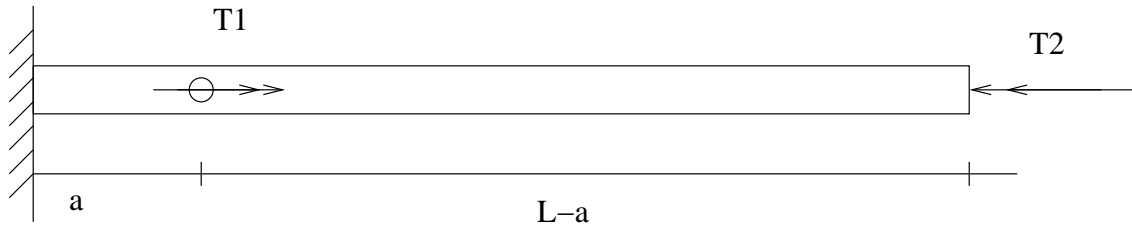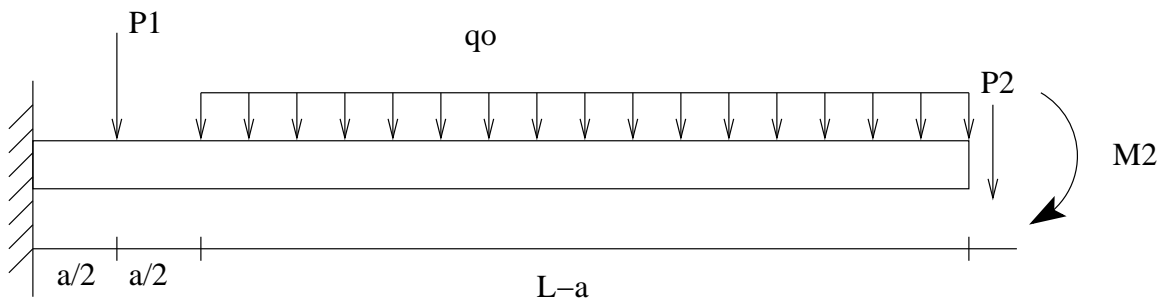## HW 10: Due Thursday April 14

1. Write the virtual work statement for the following system. Make sure to define the solution space $\mathcal{S}$ and the test function space $\mathcal{V}$.


2. Write the virtual work statement for the following system. Make sure to define the solution space $\mathcal{S}$ and the test function space $\mathcal{V}$.

3. Write the virtual work statement for the following system. Make sure to define the solution space $\mathcal{S}$ and the test function space $\mathcal{V}$.

4. Write the virtual work statement for the following system. Make sure to define the solution space $\mathcal{S}$ and the test function space $\mathcal{V}$. Hint: virtual work expressions are additive like real work.
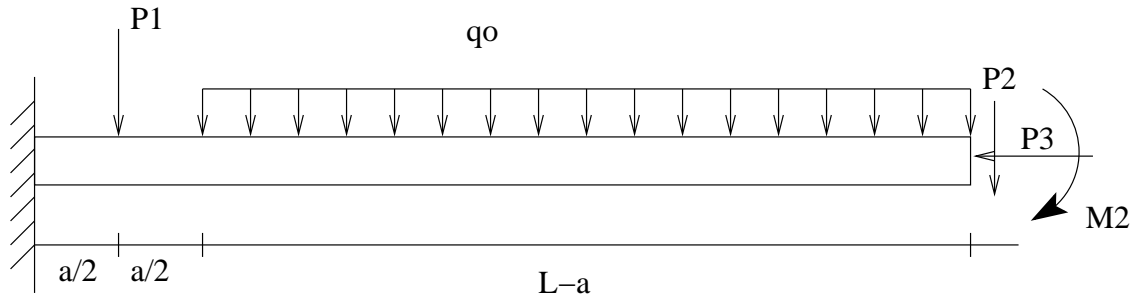
5. For the configuration shown, derive the virtual work equation starting from $(d^2/dx^2)M = q$.