

Mech 417/517 HW#6 2/12/09 due 2/19

1. Resolve Buchanan example with the system nodes renumbered to be 3 2 1 (at points ABC).

Mech 517. only

2. Apply Galerkin's method to the beam ODE. That is, evaluate

$$I = \int_0^L v(x) \left[\frac{d^2}{dx^2} \left(EI \frac{d^2 v}{dx^2} \right) - w(x) \right] dx = 0$$

by integrating the first term by parts twice. Identify the essential and none essential boundary conditions.

3. Resolve the pin-fixed, triangular load beam example using two equal length cubic beams. Plot the deflection, moments, and shear along with their exact values.