

Step 2: Classify the variables

- Requirements: $L = 8'$, $b = 4''$, $P = 300 \text{ lb}$, $X = 1.5$, $v = 1''$
- Geometry: restrict analysis to a rectangular cross-section, $h = \text{height}$
- Material Properties (need step 3 & 4 results here):
 $\rho = \text{mass density}$, $E = \text{Young's modulus}$, $S = \text{strength}$,
 $C_m = \text{cost index}$