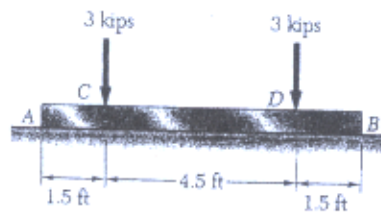


1. Explain the following terms by using some examples (64%)
 - a) Pure bending
 - b) Dilatation (Bulk Modulus)
 - c) Euler's formula for a column
 - d) St. Venant's principle
 - e) Elastic torsion formula
 - f) Shear flow
 - g) Principal stresses/ planes
 - h) Strain energy and impact loading

2. Assuming the upward reaction of the ground to be uniformly distributed, draw the shear and bending-moment diagrams for the beam AB and determine the maximum value (a) of the shear, (b) of the bending moment. (18%)



3. Determine the reaction at the roller support and the deflection at point D, knowing that a is equal to $L/3$. Also sketch the deflection curve. (18%)

