

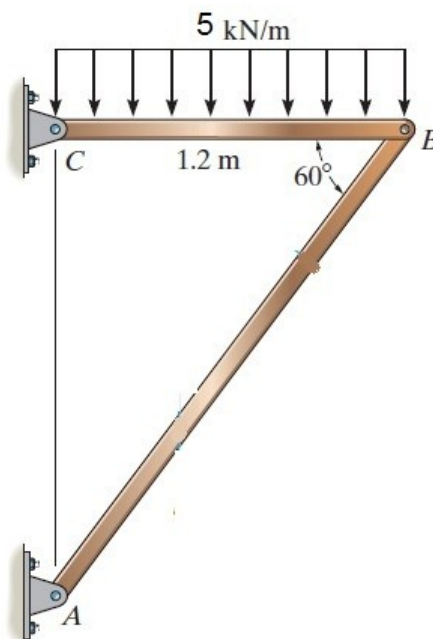
CE 203 STRUCTURAL MECHANICS I

Second Semester 2012 / 2013 (122)

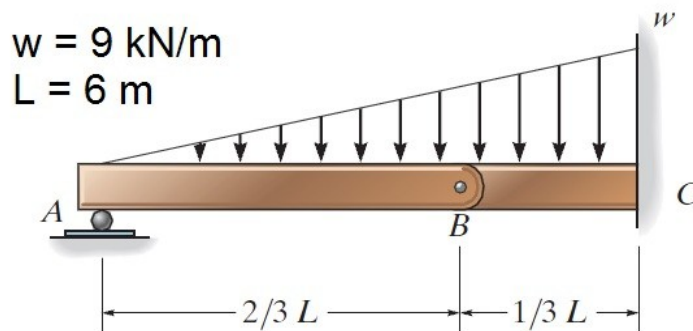
HOMEWORK NO. 1

- **Textbook Sections Covered: 1.1 – 1.4 , Review of Statics & Normal stress**
- **DUE DATE: Monday 4 February 2013**

1- For the given frame, determine the internal forces at point D (located 0.2 m to the right of C). Also, determine the internal forces at point E (located half-way between A and B). (*Hint : To solve , you need to realize that AB is a 2-force member*)

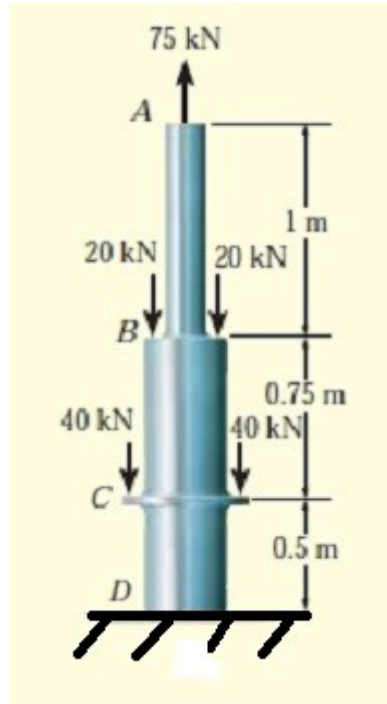


2- The beam shown below consists of 2 parts connected together using a pin at B. Determine all support reactions. Also, determine the internal forces at point D (located halfway between A and B). *Use the given values for w & L*



Continued on the next page

3 – The given rod is made of 3 parts , which have circular cross sections. The **diameter** for part AB is 20 mm, and for parts BC & CD is 30 mm. Determine the average normal stress in each of the 3 sections. What is the maximum stress in the whole rod (in absolute value).



4- Two horizontal rigid rods AB & DC are supported using cables as shown. Determine the average normal stress in each cable. The cross sectional area of each cable is 200 mm² .

