

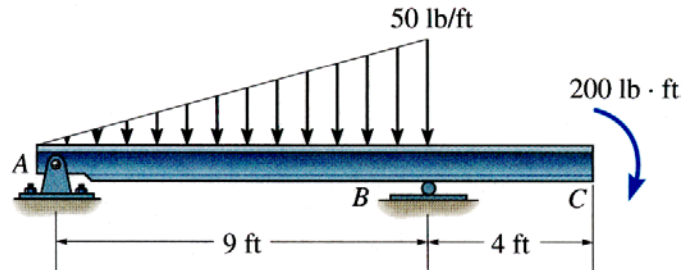
BE 50 - Statics - Winter 2005

Exam 3 – V&M Diagrams, Friction, Centroids

Name:

Section: J

1. Draw the shear and moment **diagrams** for the beam, and derive the shear and moment **formulas** for the portion of the beam under the distributed load. Be sure to label all min. and max. points on the diagrams.



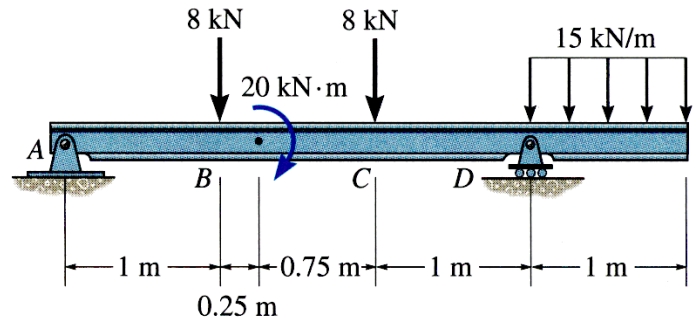
BE 50 - Statics - Winter 2005

Exam 3 – V&M Diagrams, Friction, Centroids

Name:

Section: J

2. Draw the shear and moment **diagrams** for the beam. Be sure to label all min. and max. points on the diagrams.



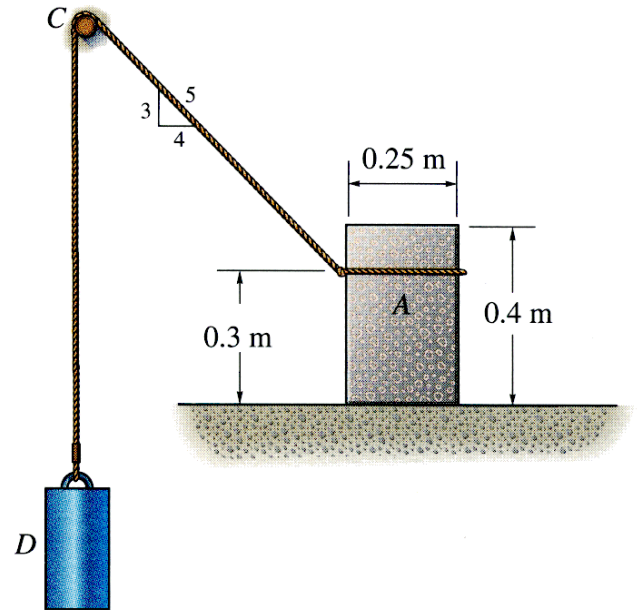
BE 50 - Statics - Winter 2005

Exam 3 – V&M Diagrams, Friction, Centroids

Name:

Section: J

3. Block A has a mass of 50 kg and rests on a surface for which $\mu_s = 0.25$. If the coefficient of static friction between the cord and the fixed peg at C is $\mu_s = 0.3$, determine the largest weight of suspended cylinder D that will not cause motion, which could include tipping or slipping.



BE 50 - Statics - Winter 2005

Exam 3 – V&M Diagrams, Friction, Centroids

Name:

Section: J

4. Using integration, determine both the **area** and the centroidal distance **x -bar** of the shaded area. Then, using the second theorem of Pappus-Guldinus, determine the **volume** of the solid generated by revolving the area about the y -axis.

