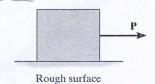
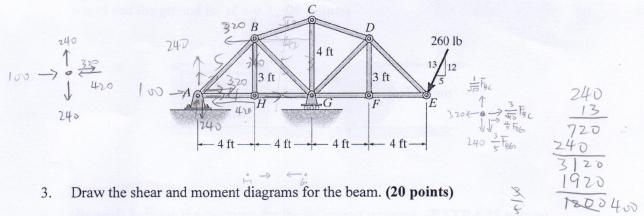
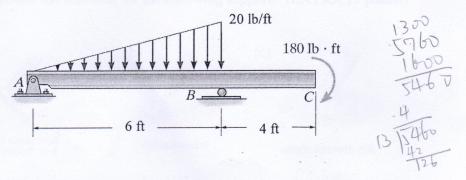
Fall 2011 (100 A) Midterm (II)

- Write down your name and student number first.
- Write down the quiz code (CCUME_100A-4201002-M002) on your answer sheet.
- 1. (a) What is a two-force member? (2 points)
 - (b) What are a simple truss and a simple space truss? (4 points)
 - (b) What are the assumptions for designing a trust? (5 points)
 - O Consider a solid block of mass m on a rough horizontal surface, as shown in the figure. If a force P is applied horizontally on the block, explain its characteristics of dry friction. (9 points)



2. Determine the force in members BG, BC, and HG of the truss as shown in the figure by using (a) the method of joints, and (b) the method of sections. State the members are in tension or compressive. (20 points)

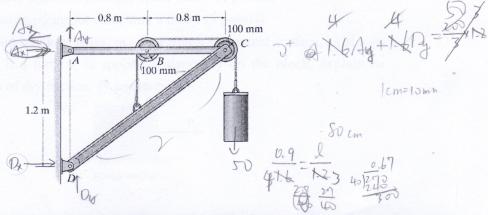




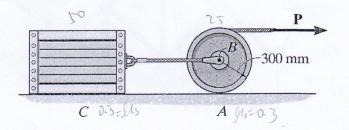
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4. The frame is used to support the 50-kg cylinder, as shown in the figure. Determine the horizontal and vertical components of reaction at points A and D. (20 points)



5. Determine the smallest force P that will cause impending notion. The crate and wheel have a mass of 50 kg and 25 kg, respectively. The coefficient of static friction between the crate and the ground is $\mu_s = 0.5$, and that between the wheel and the ground is $\mu_s' = 0.3$. (20 points)



6. (Bonus!) Indicate the reactions for the following supports: (EXTRA 15 points)

