PASS MOCK EXAM – *FOR PRACTICE ONLY*

Course: ECOR 1101 Facilitator: Hailey Quiquero

Mock exam take-up: Tuesday, December 10 @ 11:30-2:30, ME 4499

IMPORTANT:

It is **most beneficial** to you to write this mock midterm **UNDER EXAM CONDITIONS**. This means:

- Complete the midterm in 3 hour(s).
- Work on your own.
- Keep your notes and textbook closed.
- Attempt every question.

After the time limit, go back over your work with a different colour or on a separate piece of paper and try to do the questions you are unsure of. Record your ideas in the margins to remind yourself of what you were thinking when you take it up at PASS.

The purpose of this mock exam is to give you practice answering questions in a timed setting and to help you to gauge which aspects of the course content you know well and which are in need of further development and review. Use this mock exam as a ***learning tool*** in preparing for the actual exam.

Please note:

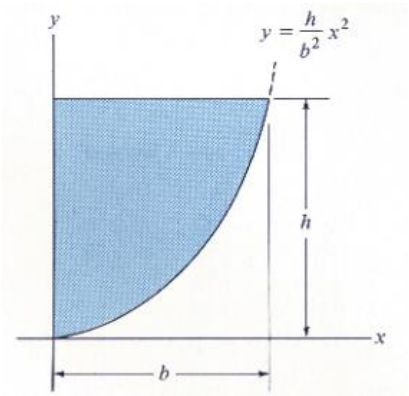
- Come to the PASS session with your mock exam complete. There, you can work with other students to review your work.
- Often, there is not enough time to review the entire exam in the PASS session. Decide which questions you most want to review – the Facilitator may ask students to vote on which questions they want to discuss.
- Facilitators do not bring copies of the mock exam to the session. Please print out and complete the exam before you attend.
- **Facilitators do not produce or distribute an answer key for mock exams.** Facilitators help students to work together to compare and assess the answers they have. If you are not able to attend the PASS session, you can work alone or with others in the class.

Good Luck writing the Mock Midterm!!

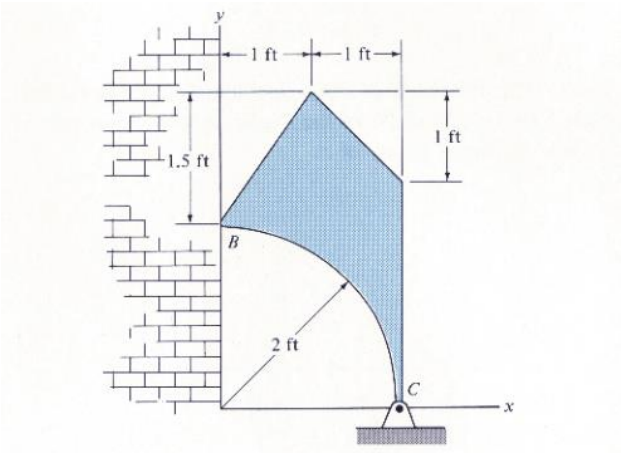
PEER ASSISTED STUDY SESSIONS

Facil: Hailey Quiquero Course: ECOR 1101 Date: December 10
Email: haileyquiquero@cmail.carleton.ca Office Hours: Tuesday @ 4:30-5:30, ML 464

1) Determine the centroid $\bar{x}$ and $\bar{y}$ of the area.



2) Determine the centre of gravity of the structure, and the support reactions at B and C. The structure has a thickness of 3 ft and the spacific gravity of the material is 90 lb/ft^3.



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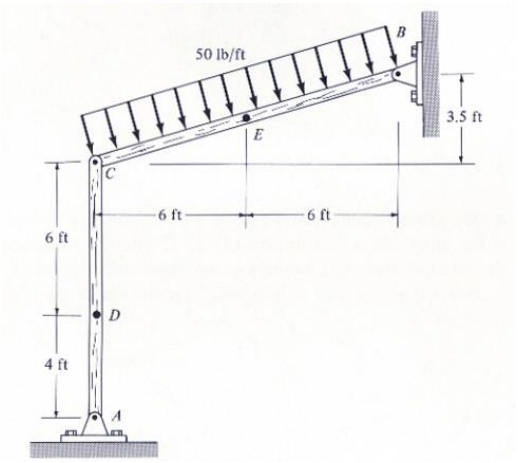
3) Determine the internal forces acting at points D and E in the two-member frame.



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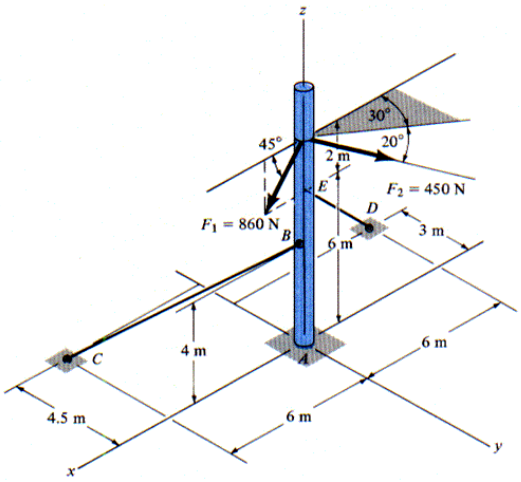
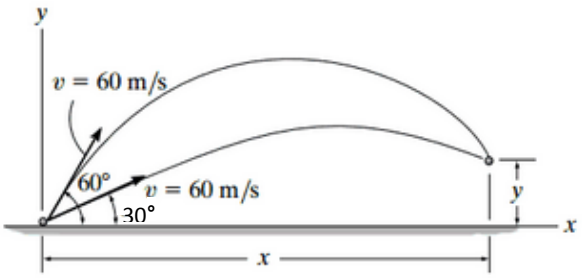
4) Determine the reaction forces at the ball-and-socket joint at A, and compute the tension in each of the guy wires, *BC* and *ED*.



5) Two balls are kicked from point *O,* each with a speed of 60 m/s. The first is at an angle of 60° to the horizontal, while the second is shot at an angle of 30° above the horizontal. Determine the time between the kicks so that the balls collide. At what position (*x, y*) will they collide?



6) The collar has a weight of 5 lbf, and is sliding along the smooth rod. Determine the normal force of the collar at A, if the collar has a speed of 10 ft/s at this instant. Also, what is the acceleration of the collar at this point? The spring has a stiffness of 10 lbf/ft, and an unstretched length of 3 ft.