PEER ASSISTED STUDY SESSIONS –Mock Exam April 2013

Facil: Ross Cruikshank
Course: ECOR 1101

PASS MOCK EXAM – FOR PRACTICE ONLY

Dates and locations of mock exam take-up:
1. Wednesday April 10, 2013, 6:00-8:00 in MC 5050
2. Thursday April 11, 2013, 12:00-2:00 in LA C164

IMPORTANT:

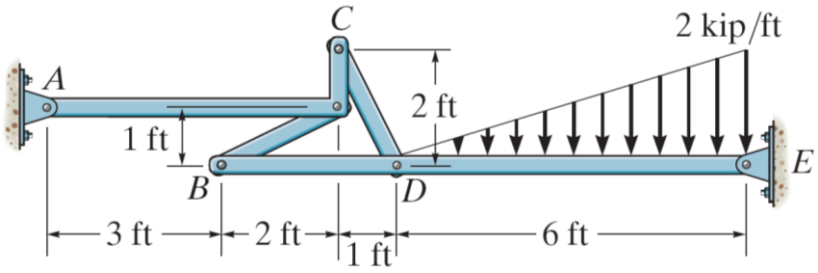
The purpose of this mock exam is to give you practice answering questions in a timed setting and to help you to gauge which aspects of the course content you know well and which are in need of further development and review. Use this mock exam as a learning tool in preparing for the actual exam.

Please note:

- Come to the PASS session with your mock exam complete.
- 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.

Problem 1

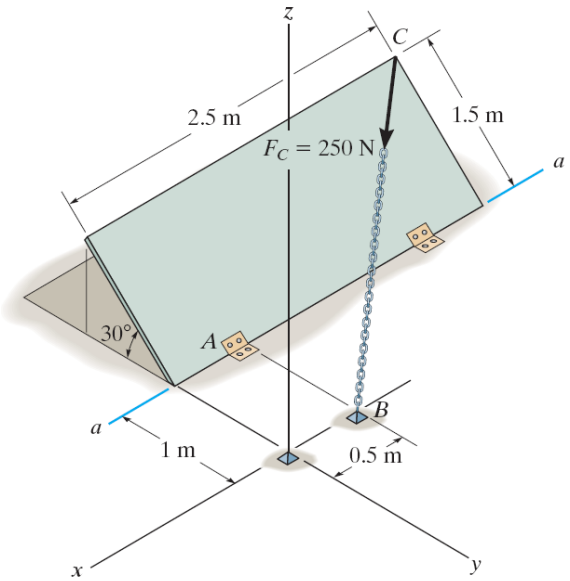
Determine the horizontal and vertical components of reaction at the pin supports A and E of the compound beam assembly.



Problem 2

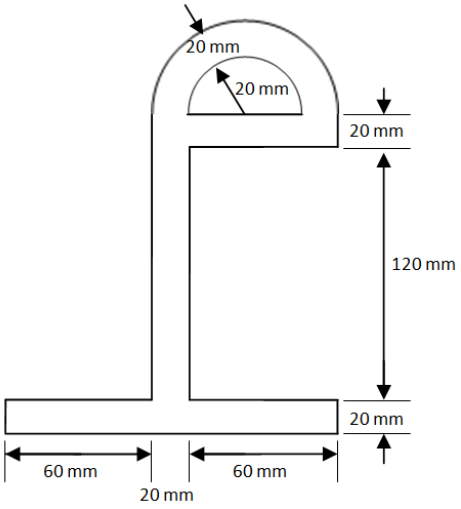
(a) Determine the moment of the force $\mathbf{F_C}$ about the door hinge at A. Express the result as a Cartesian vector.

(b) Determine the magnitude of the moment on the hinged axis *aa* of the door.



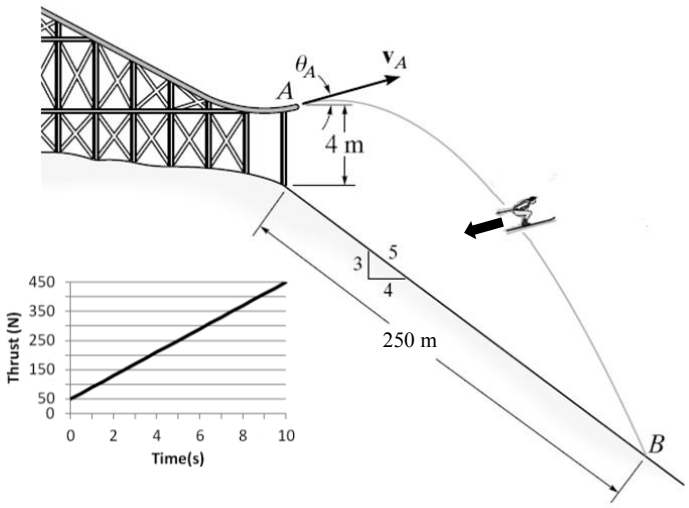
Problem 3

Locate the centroid of the composite area.



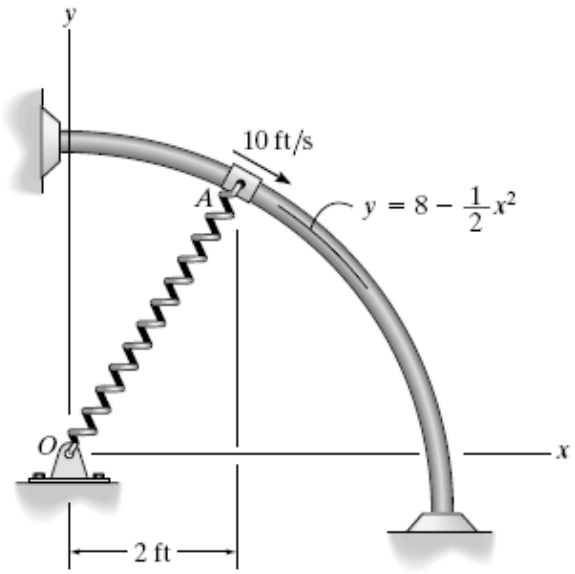
Problem 4

A skier tries to go over a ski jump wearing a jet pack. She leaves the ramp at an angle $\theta_A = 25^0$ with the horizontal. If she maintains her angle of 25^0 during the descent and turns on her jet pack as soon as she reaches point A, determine the initial speed v_A and time of flight t_{AB} required to land safely at point B. The relationship of the thrust produced by the jet pack and time and is shown in the curve.



Problem 5

The 5-lb collar slides on the smooth rod, so that when it is at A it has a speed of 10 ft/s. If the spring to which it is attached has an unstretched length of 3 ft and a stiffness of k = 10 lb/ft, determine the normal force on the collar and the acceleration of the collar at this instant.



Problem 6

When the 50-kg cylinder is released from rest, the spring is subjected to a tension of 60 N.

(a) Determine the speed of the cylinder after it has fallen 200 mm.

(b) How far has it fallen when it momentarily stops?