

# PASS MOCK EXAM

– FOR PRACTICE ONLY –

Course: ECOR 1101 BCDE    Facilitator: Kendelle Anstey    Review Session: Tuesday, April 7<sup>th</sup>, 4-5:30pm 402ML

Dates and locations of mock exam take-up: Thursday, April 9<sup>th</sup>, 2-5pm in Staecie Building rm 103

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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:

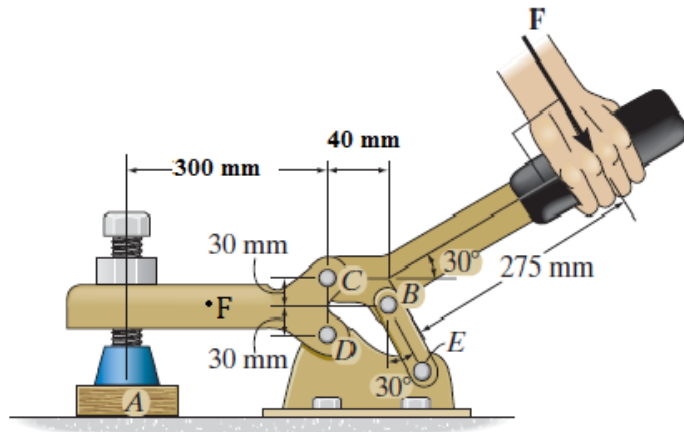
- Come to the PASS session with your mock exam complete. There, you can work with other students to review your work.
- Often, there is not enough time to review the entire exam in the PASS session. Decide which questions you most want to review – the Facilitator may ask students to vote on which questions 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!!**

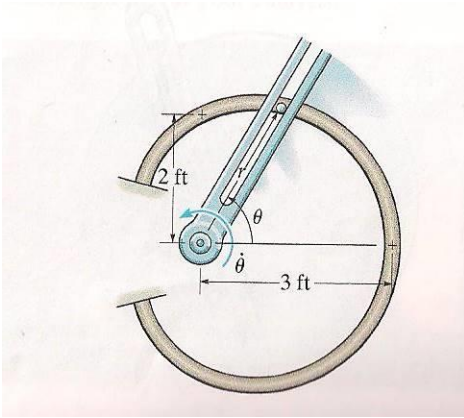
**DISCLAIMER:** PASS handouts are designed as a study aid only for use in PASS workshops. Handouts may contain errors, intentional or otherwise. It is up to the student to verify the information contained within.

**PLEASE NOTE: THIS HANDOUT IS NOT TO BE DISTRIBUTED.**

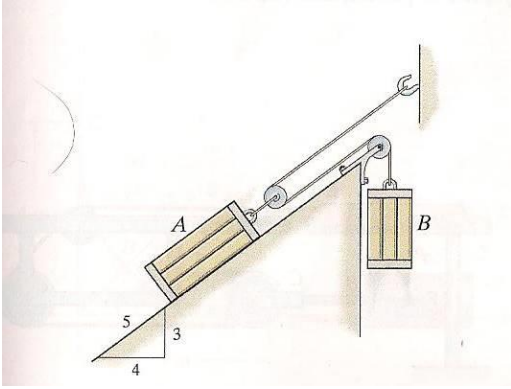
- Q1. (Worth 25%) If a force of 400N is applied to the handle of the toggle clamp,
- (a) Determine the resulting clamp force at A.
  - (b) Find the internal force at point F (not force F)



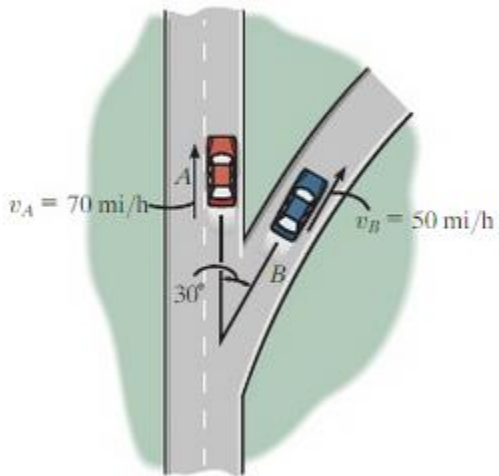
Q2. (25%) The forked rod is used to move the smooth 3-lb particle around the horizontal path in the shape of a limaçon,  $r=2+\cos\theta$  ft. If  $\theta = 0.4t^2$  rad, where  $t$  is in seconds, determine the force which the rod exerts on the particle at the instant  $t=2$ s. The fork and the path contact the particle on only one side.



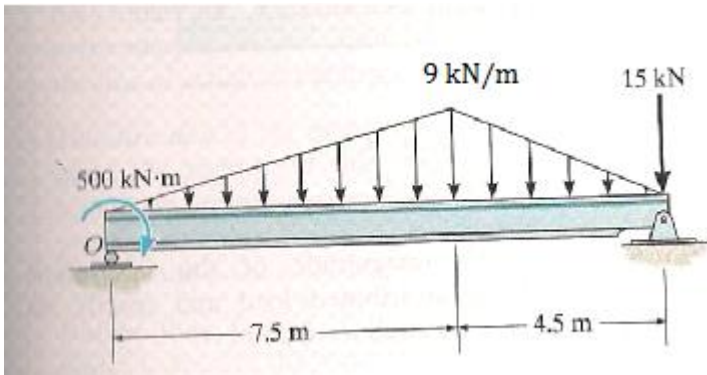
Q3. (25%) The two blocks A and B have weights  $W_A = 40 \text{ lb}$  and  $W_B = 15 \text{ lb}$ . If the kinetic coefficient of friction between the incline and block A is  $\mu_k = 0.1$ , determine the speed of A after it moves 3ft down the plane starting from rest. Neglect the mass of the cord and pulleys.



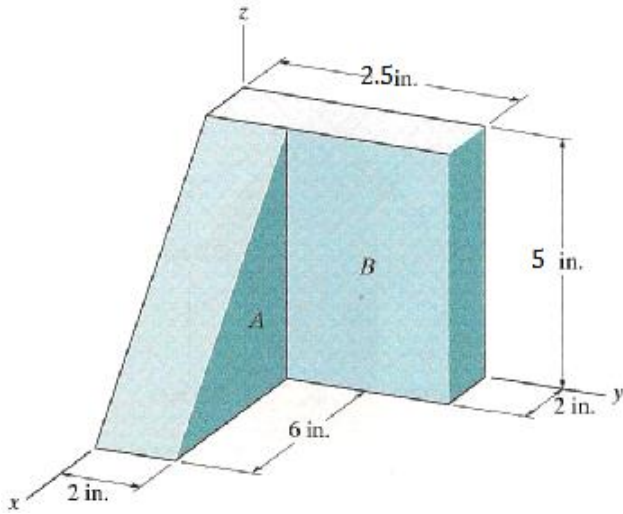
Q4. (5%) At the instant shown, cars A and B travel at speeds of 70mi/h and 50 mi/h, respectively. If B is decreasing its speed at  $1200 \text{ mi/h}^2$  while A is increasing its speed at  $700\text{mi/h}^2$ , determine the acceleration of B with respect to A. Car B moves along a curve having a radius of curvature of 0.7 mi.



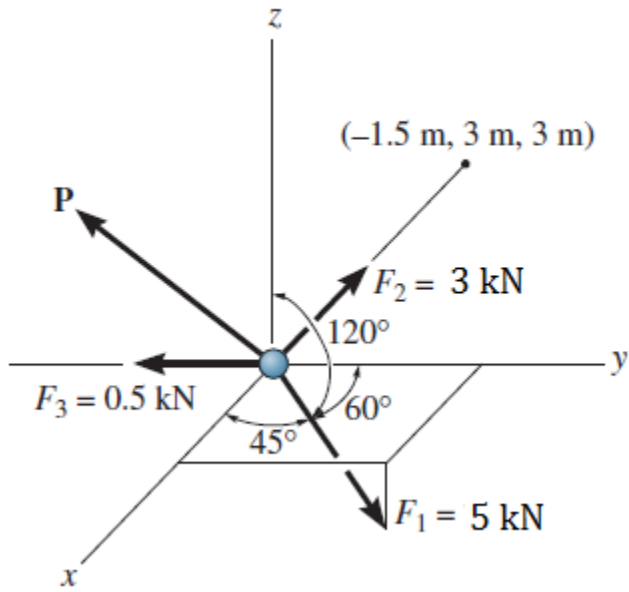
Q5. (5%) Replace the loading by a single resultant force and specify the location of the force measured from point O.



Q6. (5%) Locate the center of gravity of the two-block assembly. The specific weights of materials are  $A=150\text{lb/ft}^3$  and  $B=400\text{lb/ft}^3$



Q7. (10%) Determine the magnitude and direction of the force  $P$  required to keep the concurrent force system in equilibrium.





Q5. (5%)