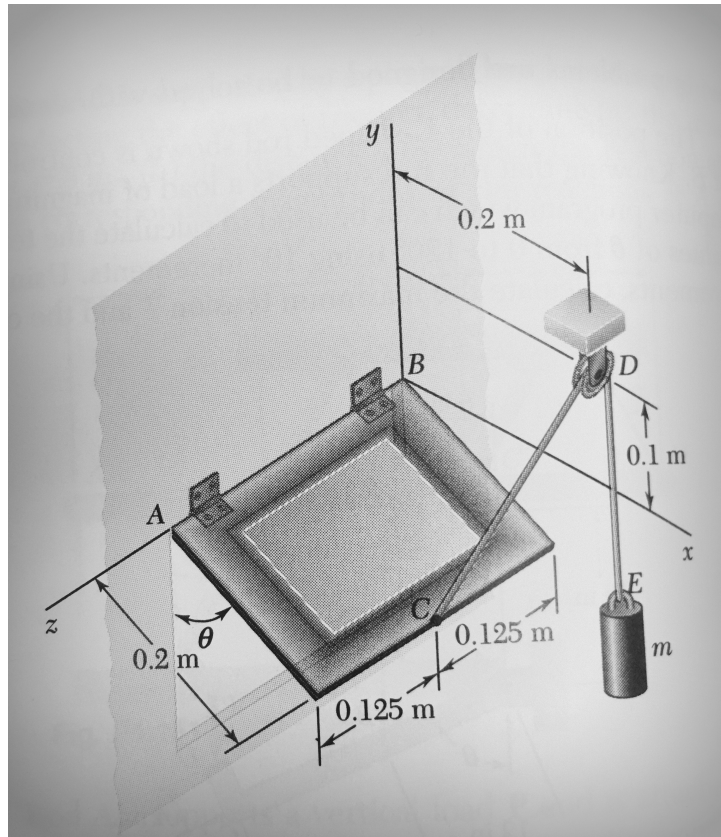


Name: \_\_\_\_\_

## TAM 210/211 Written Assignment 6 (due on February 24th)

A 200 x 250 mm panel of mass 20 kg is supported by hinges along edge  $AB$ . Cable  $CDE$  is attached to the panel at  $C$ , passes over a small pulley at  $D$ , and supports a cylinder of mass  $m$ . Neglect the effect of friction.



Determine

- The position vector of cable  $CD$ .
- The equilibrium equations (required to solve this problem).
- Calculate the mass of the cylinder corresponding to the equilibrium. Your solution will be in terms of  $\theta$ .
- The value of  $\theta$  corresponding to  $m = 10$  kg.
- The maximum angle ( $\theta_{max}$ ) the panel can reach. (Hint: Plotting  $m$  vs  $\theta$  will help you answer the question)