ME 360 – H15 Name _____

USE THIS SHEET AS THE FIRST PAGE OF YOUR HOMEWORK SUBMISSION

1) Determine minimum coefficient of friction to provide 400 ft.lbf torque for long-term use from the automotive brake disk described below with 1500 lbf actuation.

rubbing track circumferential

outside DIA = 11 in, inside DIA = 6 in, shoe length = 50°, two shoes, caliper piston DIA = 1.5 in

μ = _____

What is maximum pressure between the friction material and disk? p_{MAX} = _____

Is this coefficient of friction and pad pressure suitable for molded friction material? YES NO

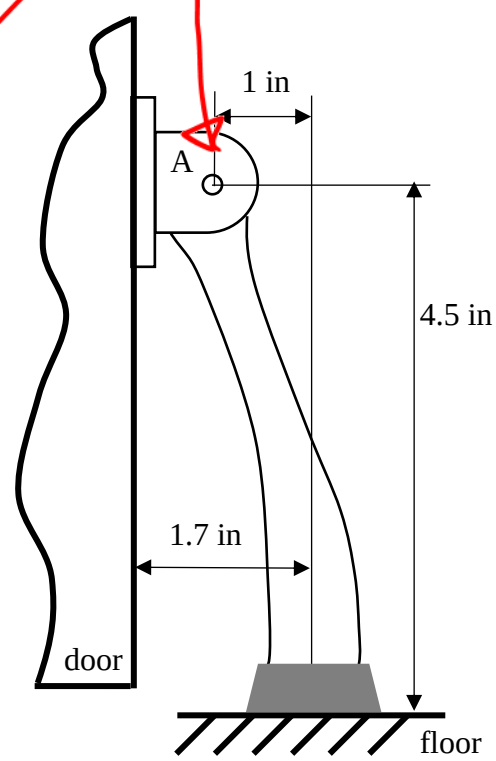
What torque would you expect when the brake is brand new? T_{NEW} = _____

What inside DIA would you recommend? inside DIA = _____ Why?

What line pressure is required for brake fluid in the caliper piston? p_{LINE} = _____

2) A kickdown door holder shown below is a self-actuating drum brake with infinite drum radius for the floor. Determine minimum coefficient of friction μ between the rubber foot and the floor to provide self-locking. **Show your work.**

μ _____ ΣM about A

Will this door holder work if the floor is wet linoleum?

YES NO Why?