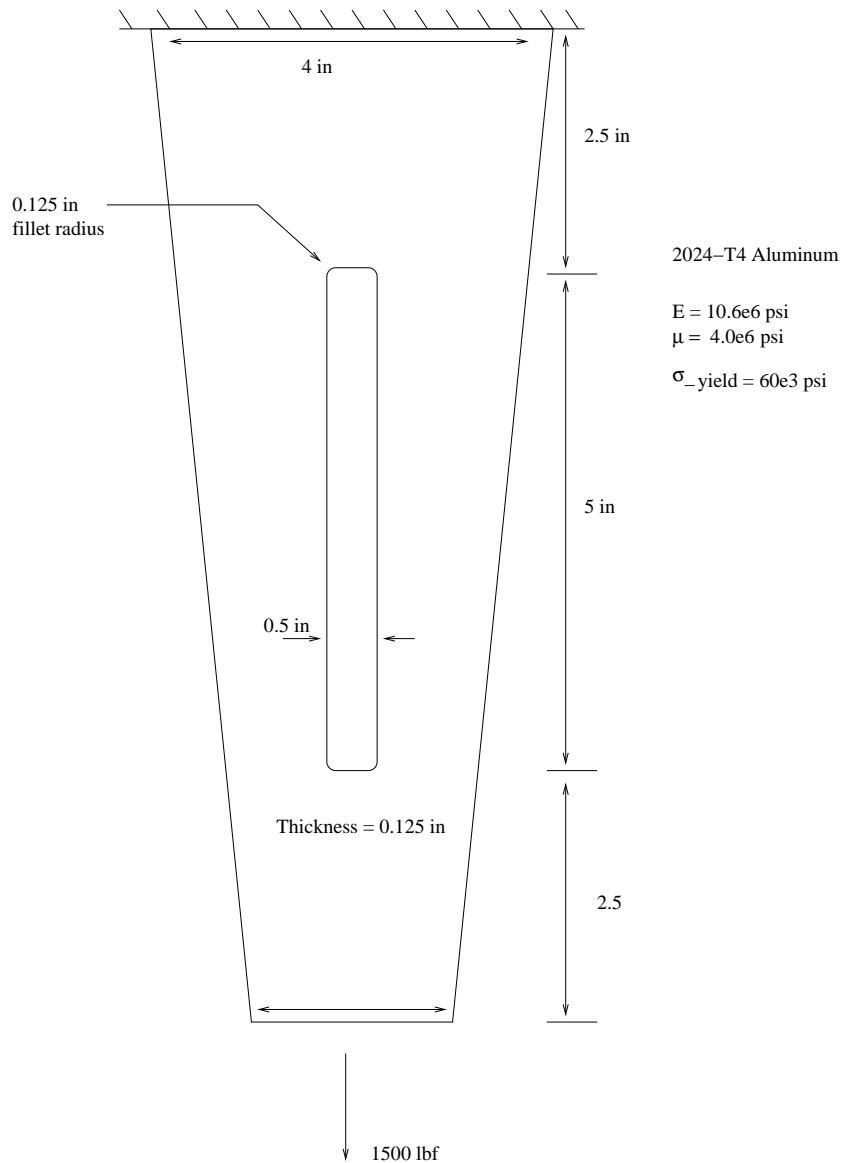


HW 7: Due April 9

1. For the hanger shown determine the elongation for the given load; find the maximum permissible load before yielding according to mises criteria.



2. Consider circular disk of 6063-T83 Aluminum of radius 50 mm and thickness 15 mm. A ring of ANSI 4340 Steel of inner radius 50 mm and outer radius 53 mm (thickness 7.5 mm) is fitted over the disk and bonded to it at room temperature, 20 C. The mid-planes of the disk and ring align with each other. The entire assembly is then heated. At what temperature will the steel first cease to behave elastically? You can assume the steel has not been fully annealed and yields at a tensile stress of 450 N/mm^2 and that the aluminum remains elastic throughout the process. For a yield criteria you can assume the von Mises condition.