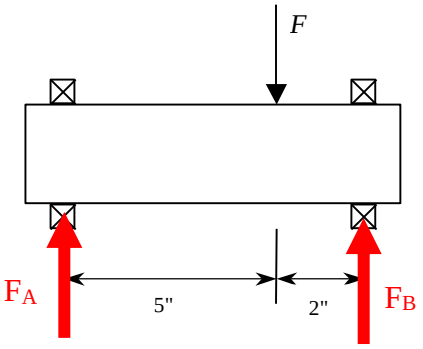
ME 360 – H11 Name _____

USE THIS SHEET AS THE FIRST PAGE OF YOUR HOMEWORK SUBMISSION

1) Two 6315 ball bearings from Norton Figure 11-23 with 75 mm bore were selected to roughly match the 3 inch DIA journal bearings from H10 problem 2). Determine L_{10} bearing life for F = 5,000 N at 1500 rpm from H10 problem 2) and determine number of years before these bearings should be replaced. Are 6315 ball bearings suitable for operation at 5000 rpm? WHY?

L_{10} _____ years _____ OK for 5000 rpm? YES NO circle one



2) Briefly discuss expected life for the journal bearings from H10 problem 2) compared to equivalent ball bearings from problem 1) above.

3) Select the smallest ball bearing from Norton Figure 11-23 that can provide minimum L_{10} life of 200×10^6 revolutions with Fr = 2000 lbf and Fa = 1500 lbf and the inner race rotating. Specify expected L_{10} life, bearing bore, outside diameter and axial width with units mm.

brg number _____ L_{10} _____ bore _____ mm OD _____ mm width _____ mm