CVEN 305 Honors - Homework #5 Supplemental Problems

1) **For Problem 4,** develop an Excel spreadsheet that can be used to calculate the maximum shearing stress in a solid shaft for a given diameter (D) as it transmits a specified power (P) and a speed (S). The following units for the diameter, power, and speed are to be inches, horsepower, and RPM, respectively. Solve problem 4 using your spreadsheet to check your answer.

2) **For Problem 6,** A steel pipe of 3.5 in. outer diameter is to be used to transmit a torque of 3,000 ft-lb without exceeding a specified allowable shearing stress. Develop a chart that can be used to select the minimum thickness required for the wall of the pipe for a specified allowable shearing stress. Using this chart, solve problem 6 to check your answer.