

**Department of Mechanical Engineering**  
**ME534 Advanced Graduate Fluid Mechanics**

**Homework #3, due 05-21-18**

**Problem 1**

Apply Rayleigh's criterion to Taylor-Couette instability to determine the range of values  $R_1$ ,  $R_2$ ,  $\Omega_1$ ,  $\Omega_2$  for which the flow can not be unstable.

**Problem 2**

Discuss the effect of viscosity in the growth rate of Rayleigh-Plateau instability of a liquid cylinder. Consult the (abundant) scientific literature on this problem.