Prelab Questions

Lab3

Measurement of pressure distribution and Lift for an airfoil

(To be turned in at the beginning of the laboratory class period)

Short Answer (no more than one sentence)

1. Name three quantities that will be measured or calculated in this laboratory.

2. How many pressure taps are there on the airfoil and which instrument is used to scan them?

3. Give the Reynolds number and corresponding free-stream velocity for the experiment?

4. What are the two methods used to obtain the Lift force for this experiment?

5. Sample calculation. Calculation the lift coefficient based on the following data: Lift force is 2.446N, the chord length is 0.3048m, the airfoil span is 1m, air density is 1.1934kg/m^3, the free stream velocity is 4.1m/s. (Hint: the definition of the lift coefficient.)