F17+F18. The airfoil shown is operating at $M_\infty = 1.6$. Sketch the flow pattern.

a) Determine the pressure p_a on the front upper facet. Also obtain the surface Mach number M_{a} for part b).

b) Determine the pressure on the rear upper facet.

c) Using the surface pressures, determine the L', D', and corresponding c_ℓ and c_d. (Note: $\rho V^2 = \gamma p M^2$).