AE 707: Tutorial 7a. Finite Wing Aerodynamics

1. An aircraft of weight 0.22 MN with span of 27.4 m is flying level at a speed of 45 m/s at a height of 15.2 m above the ground. Consider a single horseshoe vortex representation of the aircraft, assuming that the bound vortex spans the entire wing. Determine the reduction in induced drag due to the ground effect on the aircraft.