
1. Consider a UAV with a rectangular wing that has a chord length of 0.3m. If it cruises at sea level at 9 m/s, what is the associated Reynolds number based on the chord? If the wing span is 2.4 m, and $C_L = 0.5$ during straight and level flight at sea level at 9 m/s, what is the mass of the UAV? If the spanwise load distribution is elliptical, what is the induced drag in Newtons?

2. Consider a larger, faster UAV with a rectangular wing that has a chord length of 1m. If it cruises at an altitude of 1 km at 50 m/s, what is the associated Reynolds number based on the chord? If the wing span is 10 m, and $C_L = 0.25$ during straight and level flight at an altitude of 1 km at 50 m/s, what is the mass of the UAV? If the spanwise load distribution is elliptical, what is the induced drag in Newtons? If the landing speed of the UAV is 18 m/s, what lift coefficient is needed during landing at sea level?