**Aerodynamic constants**

mu = 1; %no units

Cl\_max = 2.0; %no units

%Cl\_to = 1.8; %no units

Cl\_0 = 0.5; %no units

%Cd\_to = 0.04; %no units

Cd\_0 = 0.056;

Cd\_min = 0.033;

e = 0.8; %span eff, no units

AR = 12.2 ;

k = 1/(pi\*AR\*e);

L\_D = 15;

L\_D\_max = 16;

g = 9.81; %in m/s^2

rho\_sl = 1.225; %in kg/m^3

rho\_cru = 1.1033; %cruise atlitude = 1.5 km, kg/m^3

%sg = 150; %m, ground roll

**Velocities**

v\_cru = 15%(200\*5)/18 %from kmph to m/s

v\_stall = v\_cru/1.5 %m/s

v\_climb = v\_stall\*1.2 %mps, from Cessna 206

v\_to = v\_stall\*1.1 %mps

roc\_vy = 1.2/(v\_climb\*1.2) %no units

WingLoad\_stall = 0.5\*rho\_cru\*v\_stall^2\*Cl\_max/g %in kg/m^2

**Dynamic pressures**

q\_climb = 0.5\*rho\_sl\*v\_climb^2 % kg/m/s^2

q\_cru = 0.5\*rho\_cru\*v\_cru^2 %kg/m/s^2

**Propulsion and battery**

eta = 0.8;

DiskLoad = 10; %kg/m^2

fig\_of\_merit = 0.75;