>> Maximum Velocity Calculator for Max Thrust

-- this function allows to calculate the maximum velocity for the corresponding maximum thrust of an aircraft .

```
function [V_max] = maxVel_for_thrust(thrust, weight, density, wing_area, zeroLiftDraf_coeff, dr
% Assigning simplified variables to the input variables
T = thrust; % [N] or [lb]
W = weight; % [m] or [ft]
rho = density; % [kg/m^3] or [slug/ft^3]
S = wing_area; % [m^2] or [ft^2]
C_D0 = zeroLiftDraf_coeff;
K = dragPolar_coeff;

% Defining the system to solve
syms V
% Lumping up large coefficients
A = 0.5 * rho * S * C_D0;
B = 2 * K * W^2 / rho / S;
% Setting the system equation
eqn = A * V^4 + B == T * V^2;
% Solving the Thrust equation for V
V_max_vec = solve(eqn, V);

% eliminating the complex values in the vector
V_max_vec = double(V_max_vec);
z = [];
for k = 1:length(V_max_vec)
    if imag(V_max_vec(k)) == 0
        z = [z, real(V_max_vec(k))];
    end
end

% Therefore the maximum Velocity becomes
V_max = max(z);
end
```