Question #7

-- In this question the function **maxVel_for_thrust.mlx** will be called in order to solve the corresponding maximum velocity for the power

Preparation

```
% Adding path to enable the use of function in another directory
doc = genpath('C:\Users\small\Desktop\classes\2019-spring\AAE251\hw9\matlab\functions');
addpath(doc);

wing_area = 30; % [m^2]
e_Oswald = 0.7;
zeroLiftDrag_coeff = 0.022;
density = 1.225; % [kg/m^3]
dragPolar_coeff = 0.047;

% The maximum thrust is
T_max = 12000; % [N]

% the weight of the aircraft becomes
weight = 60000; % [N]
```

Main

```
% Calling out the function to get the maximum velocity
V_max = maxVel_for_thrust(T_max, weight, density, wing_area, ...
    zeroLiftDrag_coeff, dragPolar_coeff);
```

Result

```
fprintf(['The maximum velocity of this ',...
    'Cessna Citation at sea level is %.2f m/s'], V_max);
```

```
The maximum velocity of this Cessna Citation at sea level is 169.99 m/s
```