Question #3

-- In this question the function **minPower_cal.mlx** and **minThrust_cal.mlx** are used

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);

wingArea = 82; % [m^2]
weight = 25000; % [kg]
zeroLiftDrag_coeff = 0.016;
density = 1.225; % [kg/m^3]
dragPolar_coeff = 0.04;
altitude = 0;
```

Main

(a)

```
% Calling out the function to calculate the minimum thrust
[T_min] = minThrust_cal(altitude, weight, dragPolar_coeff, zeroLiftDrag_coeff);
```

--result

```
fprintf(['The required minimum thrust for ', ...
    'this aircraft is %.2f N'], T_min);
```

```
The required minimum thrust for this aircraft is 1264.91 N
```

(b)

```
% Calling out the function to calculate the minimum power
[P_min] = minPower_cal(density, weight, wingArea, ...
    dragPolar_coeff, zeroLiftDrag_coeff);
```

--result

```
fprintf(['The required minimum power for ', ...
    'this aircraft is %.2f W'], P_min);
```

The required minimum power for this aircraft is 196.91 W