>> Max Range Calculator

-- this function will calculate the maximum range for an aircraft

```
function [R_max] = maxRange_cal(TSFC, maxGrossWeight, maxFuelWeight, dragPolar_coeff...
    , zeroLiftDrag_coeff, wingArea, density)
% Assigning variables for simplicity
W_gross = maxGrossWeight; % [N] or [lb]
W_fuel = maxFuelWeight; % [N] or [lb]
K = dragPolar_coeff;
C_D0 = zeroLiftDrag_coeff;
S = wingArea;
rho = density;
% Converting the TSFC
c = TSFC / 3600;
% Initial weight
W1 = W_gross;
% Final weight
W2 = W_gross - W_fuel;

% Calculating the max Range
% Assigning large coefficients variables to make things easier
A = 2 / c * sqrt(2 / rho / S);
B = sqrt(W1) - sqrt(W2);
C = 9 * C_D0^(-1.5) / 16 / sqrt(3 * K);

R_max = A * B * C;

end
```