
```
%Greg Soos
%Homework 3
%AERO 215-03
%10.29.2017

R = [ -6533, 1570, 42 ] ; %km
V = [ -1.59, -6.65, 6.5 ] ; %km/s

%Input S/C position and velocity vectors

[a, e, inc, RAAN, argper, truanom] = CoEs(R, V) ;

%Input above two vectors in CoEs function

disp(['Semi-Major Axis: ', num2str(a), ' km'])
disp(['Eccentricity: ', num2str(e)])
disp(['Inclination: ', num2str(inc), ' degrees'])
disp(['Right Ascension of Ascending Node: ', num2str(RAAN), '
degrees'])
disp(['Argument of Perigee: ', num2str(argper), ' degrees'])
disp(['True Anomaly: ', num2str(truanom), ' degrees'])

%Display results with appropriate units

Semi-Major Axis: 13445.4785 km
Eccentricity: 0.50028
Inclination: 43.5516 degrees
Right Ascension of Ascending Node: 166.1103 degrees
Argument of Perigee: 359.9235 degrees
True Anomaly: 0.59627 degrees
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