Contents

Initialize

```
clear; clc;
```

Define variables and constants

```
mu = 398600;          % km^3/s^2
```

Initial conditions

```
R = [2500 16000 4000];      % km
V = [-3 -1 5];              % km/s
```

run matlab script from appendix

```
coe = coe_from_sv(R, V, mu);

% outputs
% coe = [h e RA incl w TA a]
fprintf("e=%g", coe(2));
fprintf("\nh=%g km^2/s", coe(1));
fprintf("\ni=%g deg", rad2deg(coe(4)));
fprintf("\nOmega=%g deg", rad2deg(coe(3)));
fprintf("\nw=%g deg", rad2deg(coe(5)));
fprintf("\ntheta=%g deg", rad2deg(coe(6)));
```

```
e=0.465759
h=98623 km^2/s
i=62.5256 deg
Omega=73.7398 deg
w=22.0805 deg
theta=353.6 deg
```

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