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Initialize

```
clear; clc;
```

Define variables and constants

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

Initial conditions

```
R0 = [20000 -105000 -19000];      % km  
V0 = [0.9 -3.4 -1.5];            % km/s  
t = 2*3600;                      % s
```

do algorithm (from appendix D.16) and output results

```
[R, V] = rv_from_r0v0(R0, V0, t);  
fprintf("Final position: R=(%g, %g, %g) km", R(1), R(2), R(3));  
fprintf("\nFinal velocity: V=(%g, %g, %g) km/s", V(1), V(2), V(3));
```

```
Final position: R=(26337.8, -128752, -29655.9) km  
Final velocity: V=(0.862796, -3.2116, -1.46129) km/s
```