```
%Roshan Jaiswal-Ferri
%Section - 01
%Aero 320 HW 2 - Rotation Matricies: 10/8/24
```

# Workspace Prep

```
format long      %Allows for more accurate decimals
close all;       %Clears all
clear all;       %Clears Workspace
clc;             %Clears Command Window
```

# PART 1: Finding Rotation Matrix:

```
rV = [6783; 3391; 1953]; %Position Vector km
vV = [-3.5; 4.39; 4.44]; %Vel Vector km/s

%Converting to F'LVLH

Zlvlh = -(rV/norm(rV));
Ylvlh = -(cross(rV,vV)/norm(cross(rV,vV)));
Xlvlh = cross(Ylvlh,Zlvlh);

%Creating Matrix with new vectors

Clvlh_eci = [Xlvlh, Ylvlh, Zlvlh];
disp(Clvlh_eci)
```

```
  -0.486148869433620  -0.115648764227618  -0.866189725222505
   0.614721997304824   0.659242753609288  -0.433031012565165
   0.621108801079152  -0.742983415121945  -0.249398280017625
```

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