```
clear,clc,close all

Ig = [783.5,351.7,40.27;351.7,783.5,-80.27;40.27,-80.27,783.5];

[v,e] = eig(Ig);

fprintf('The Eigenvalues of the Moment of Inertia are: %.3f, %.3f,
 %.3f\n',e(1),e(2,2),e(3,3));
disp('The Eigenvectors are:')
disp(v)

% Principal axis
Q = v';
disp('DCM for converting to the principal axis')
disp(Q)

disp('Converting the Ig withh the DCM gives us a horizontal matrix')
Ipa = Q*Ig*Q';
disp(Ipa)
```

```
The Eigenvalues of the Moment of Inertia are: 412.177, 800.796,
 1137.527
The Eigenvectors are:
   -0.6828    0.2167   -0.6977
    0.6953   -0.1005   -0.7117
    0.2244    0.9711    0.0820

DCM for converting to the principal axis
   -0.6828    0.6953    0.2244
    0.2167   -0.1005    0.9711
   -0.6977   -0.7117    0.0820

Converting the Ig withh the DCM gives us a horizontal matrix
   1.0e+03 *

    0.4122    0.0000    0.0000
    0.0000    0.8008   -0.0000
    0.0000   -0.0000    1.1375
```

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