
Question 3, 4.18

```
Omega = deg2rad(75);
i = deg2rad(50);
w = deg2rad(80);

Q = [-sin(Omega)*cos(i)*sin(w)+cos(Omega)*cos(w) -
sin(Omega)*cos(i)*cos(w)-cos(Omega)*sin(w) sin(Omega)*sin(i);
cos(Omega)*cos(i)*sin(w)+sin(Omega)*cos(w)
cos(Omega)*cos(i)*cos(w)-sin(Omega)*sin(w) -cos(Omega)*sin(i);
sin(i)*sin(w) sin(i)*cos(w) cos(i)];

r = [6578 0 0]';

Q*r

v = [0 11.546 0]';

Q*v

ans =

    1.0e+03 *

    -3.7265
     2.1811
     4.9625

ans =

    -4.1878
   -10.6496
     1.5359
```

Question 4

```
r = [4.973e3 -1.798e3 -1.748e3];
h = [-3110.39 -9623.7 1048.54];
v = [-.5713 .4174 2.136];

e = (1/22030)*cross(v,h) - r/norm(r)

e =

    0.0601    0.0484    0.6224
```

