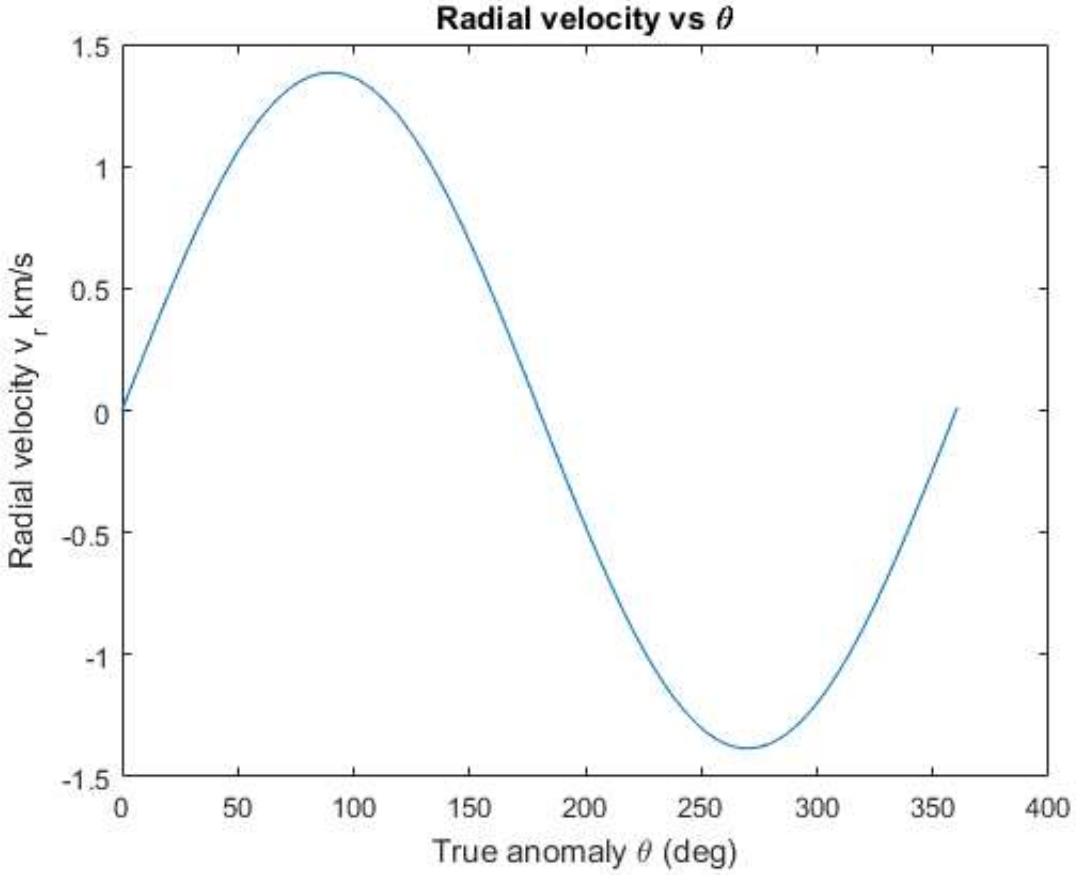
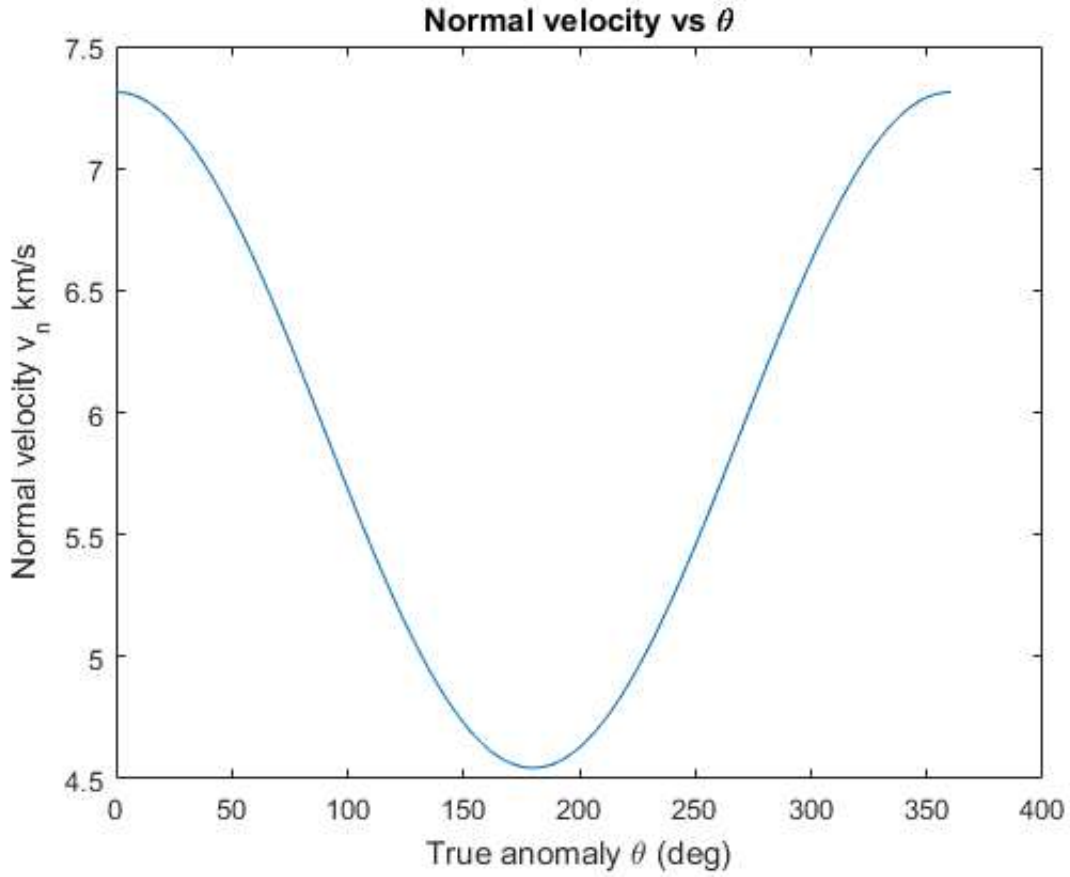
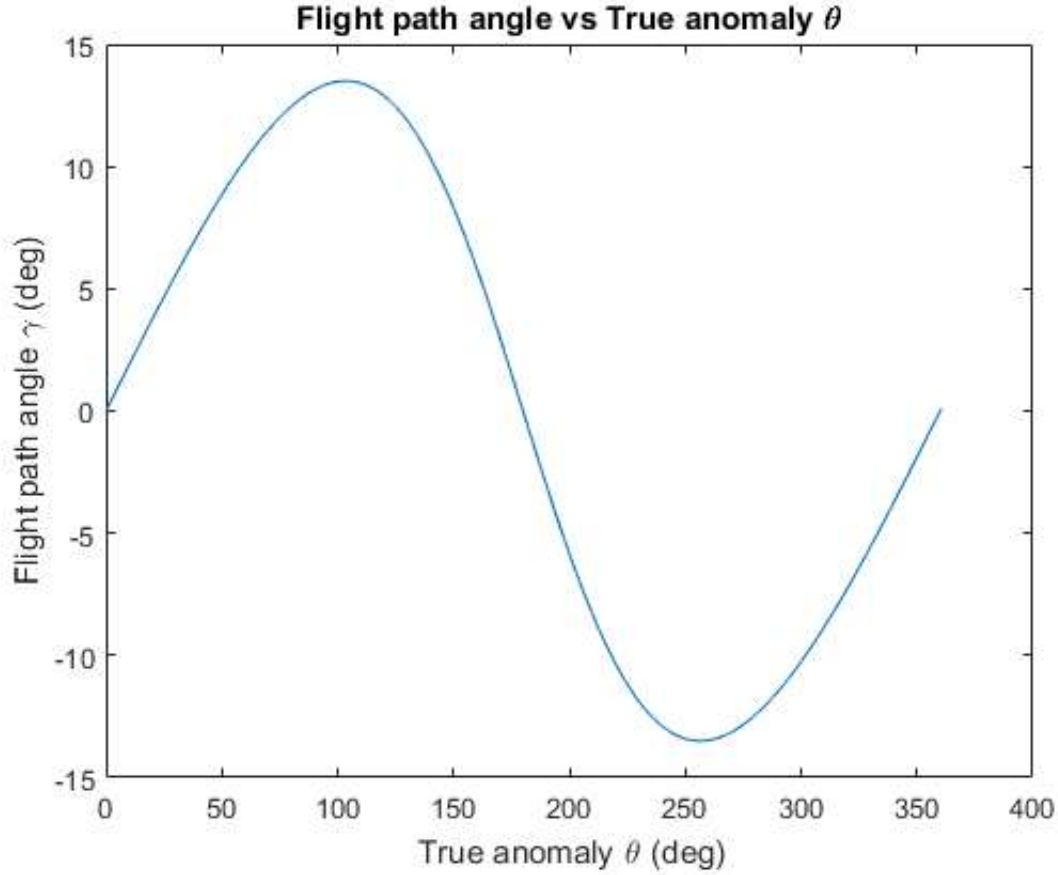
```
clc; close all; clear all
a=12000  ;
e=0.2334;
m1=5.974e24;
m2=00;
mu=6.6742e-20*(m1+m2)
spec_e=-mu/2/a;
r_p=a*(1-e);
h=sqrt(r_p*mu*(1+e));

radVel_theta(e,h); % plots radial velocity against theta
normVel_theta(e,h); % plots normal velocity against theta
pathAngle(e); % plots flight path angle against theta

fprintf('\n\n-----------------------------------------------------------\n')
fprintf('\n Specific energy\n')
fprintf(' %s\n',spec_e )
fprintf('\n Specific angular momentum \n')
fprintf(' %s\n', h )
fprintf('\n-----------------------------------------------------------\n')
```

```
mu =

   3.9872e+05



-----------------------------------------------------------

 Specific energy
 -1.661320e+01

 Specific angular momentum
 6.726037e+04

-----------------------------------------------------------
```


Radial velocity vs θ
Radial velocity v_r km/s
True anomaly θ (deg)
1.5
1
0.5
0
-0.5
-1
-1.5
0
50
100
150
200
250
300
350
400


Normal velocity vs θ
Normal velocity v_n km/s
True anomaly θ (deg)
7.5
7
6.5
6
5.5
5
4.5
0
50
100
150
200
250
300
350
400



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