```
Problem 1
True Anomaly at t1 = -167.83 deg
True Anomaly at impact = -13.17 deg
Eccentric Anomaly at t1 = -127.64 deg
Eccentric Anomaly at impact = -2.87 deg
mean motion = 0.0000 rad/s
Mean Anomaly at t1 = -1.5070 radians
Mean Anomaly at impact = -0.0045128 radians
Time from t1 to t_impact = 36.5616 hours

Problem 2 Part a b c
inclination angle i at t1 = 85.00 deg
semi-major axis a at t1 = 1830.8853 Km
e at t1 is 0.01711
RAAN at t1 is -137.89 deg
Argument of Periapsis w at t1 = -122.65 deg
True Anomaly ThetaStar = 173.51 deg
Moon Radius = 1738.0000 Km
Moon orbit periapsis radius = 1799.5565 km
Moon orbit apoapsis radius = 1862.2141 km
Tpos = 0.9943 hours
Tneg = 0.9585 hours

Problem 2 Part d c
E at t1 = 173.40 degrees
t1 - tp = 3383.8558 seconds
t2 - tp = 5183.8558 seconds
The eccentric anomaly after 86.40 minutes pass periapsis is 4.6162 radians
E at t2 = 264.49 degrees
True Anomaly at t2 = -96.49 deg
orbit radius at t2 = 1833.8944 km
Altitude at t2 = 95.8944 km
>>
```