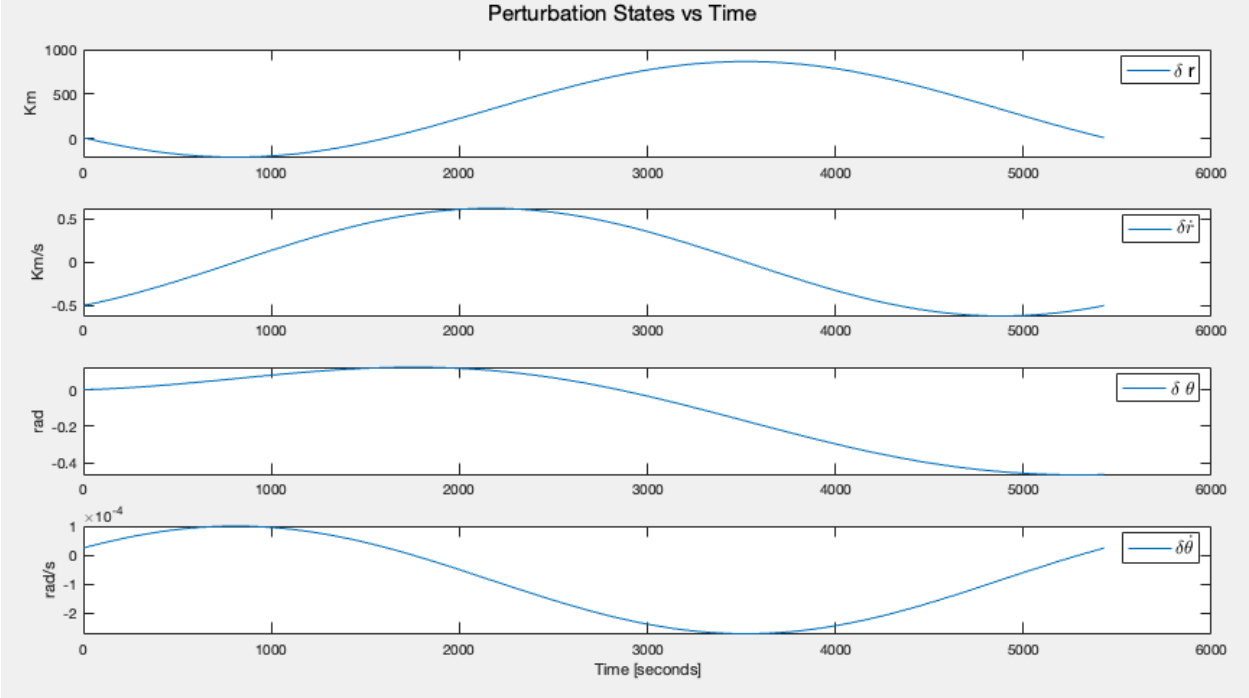
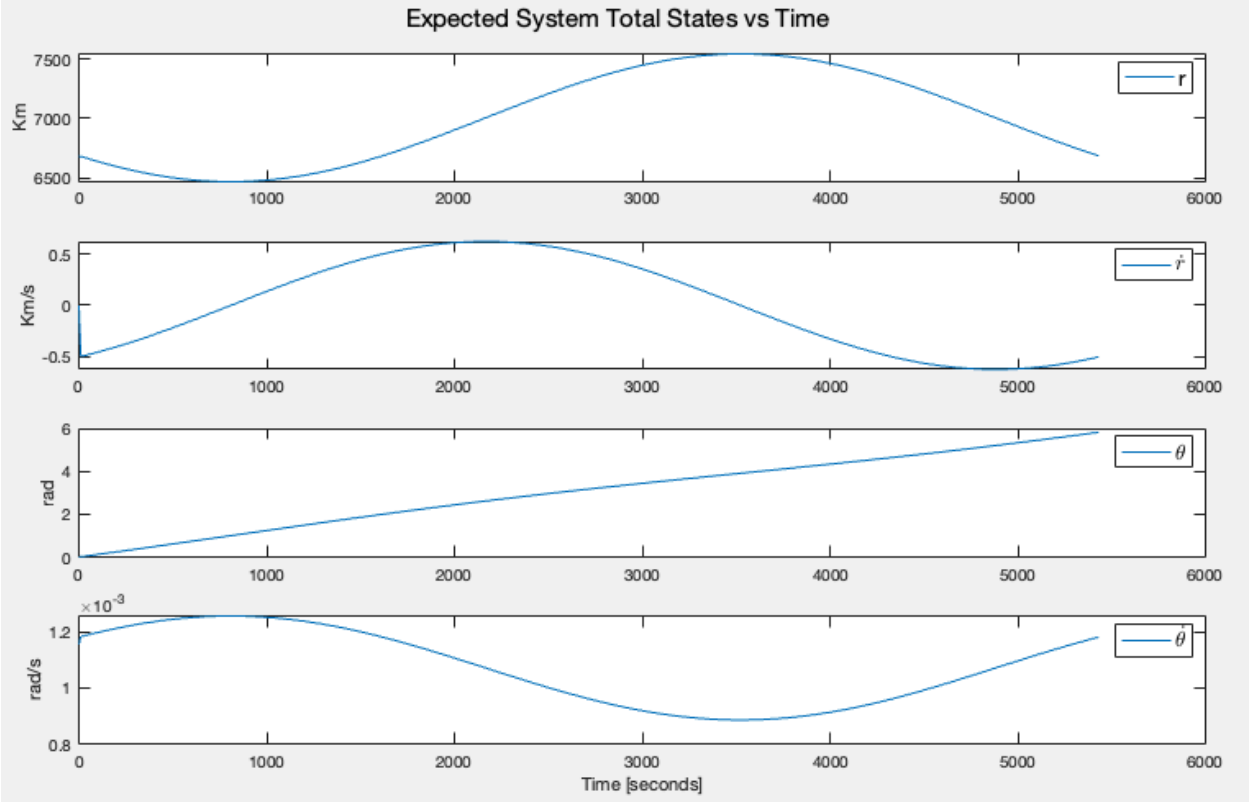
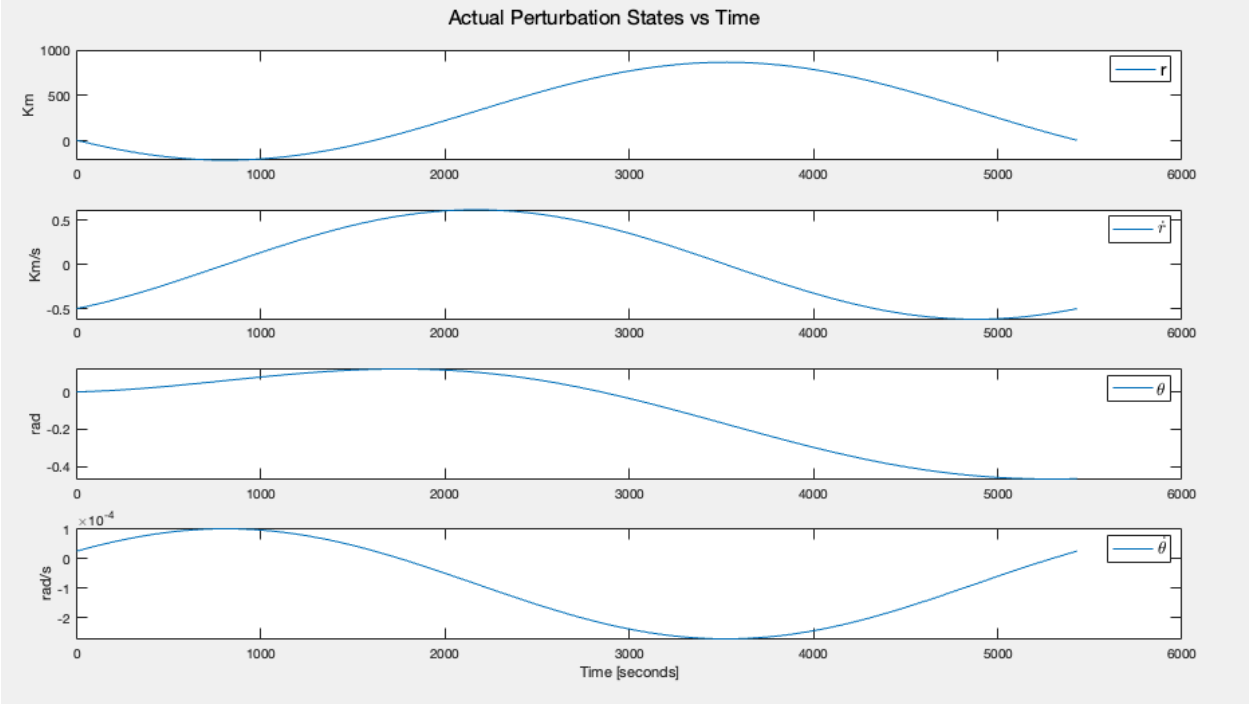
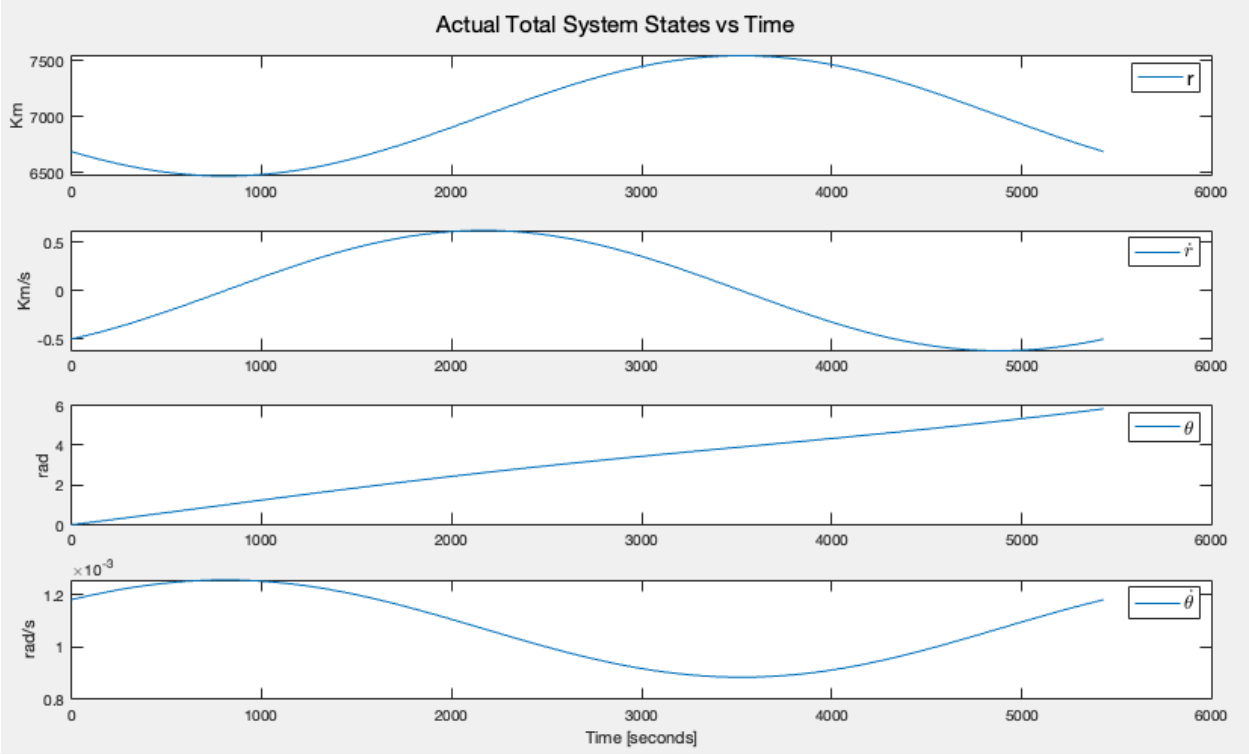
- Problem 4, part a





- Problem 4, part b





The linearized DT model provides a very good approximation of the nonlinear system's behavior. That may be because the nonlinear system is modeled around a nominal trajectory. Additionally, the time step is small compared to the period of an orbit. That's why the linearized DT model provides a good approximation.