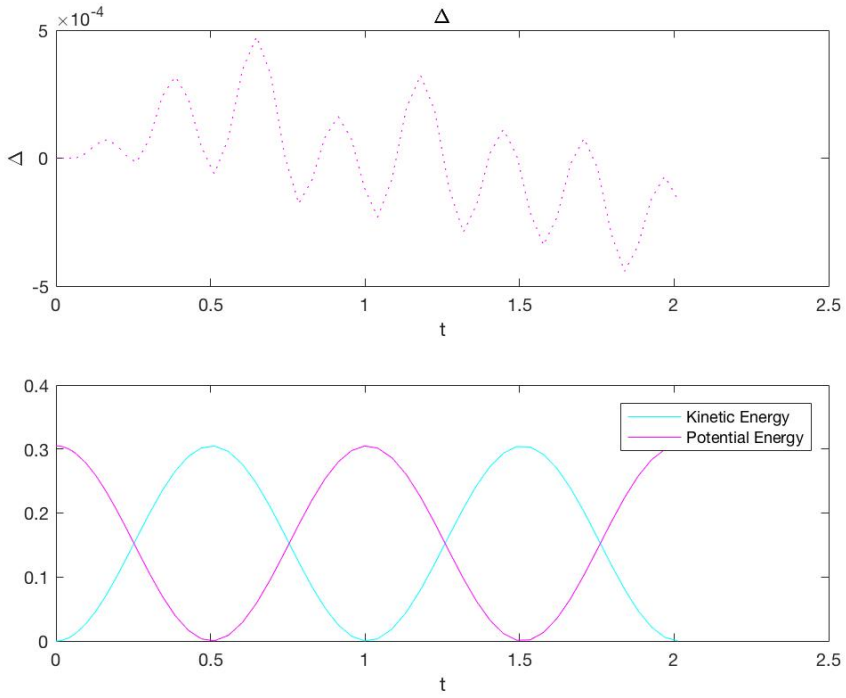
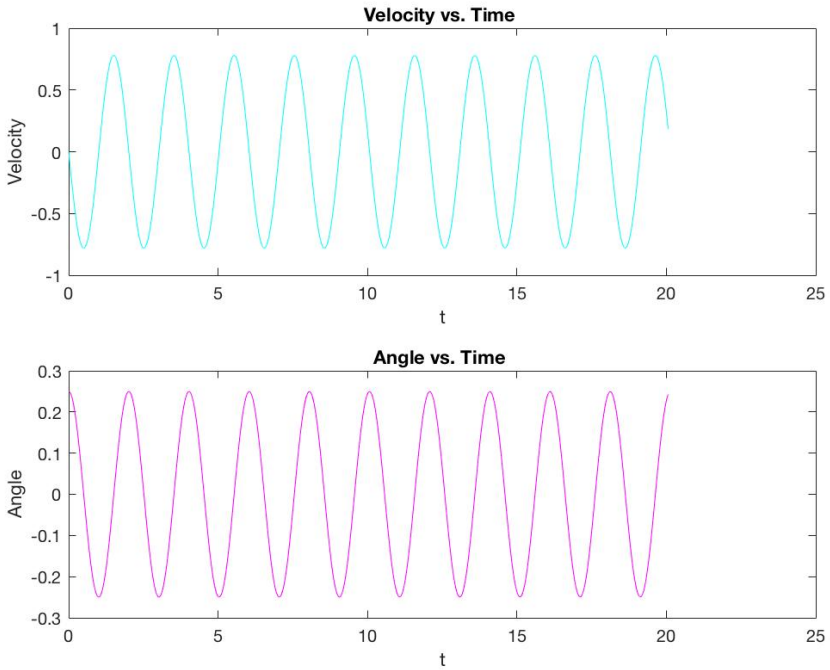
HW03

1.

Function Δ is very small during one period and energy is approximately conserved.
Plot of Kinetic and Potential energy also shows that the total energy doesn't change but each of the energies oscillate with time: (It must be noted that the ω_0=3 which means that the period was 2s.)



For position I used the angle of the pendulum with respect to its equilibrium position.



Path of the simple pendulum in phase space is always an oval because its an oscillatory motion. So with different initial conditions the path didn't change.