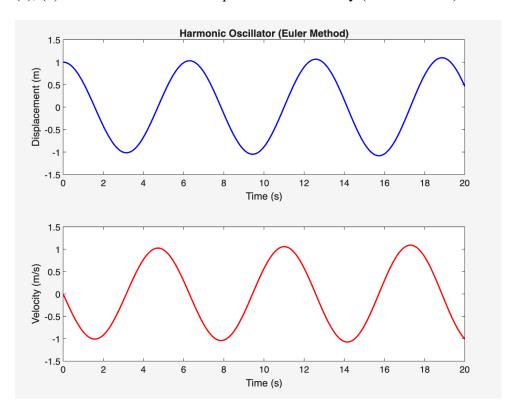
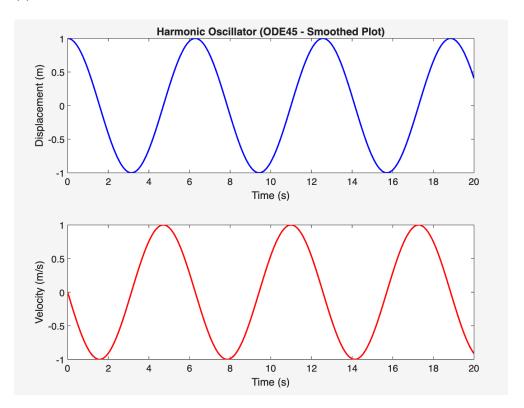
Problem 3

(a), (b) 1D Harmonic oscillator position and velocity (Euler method)

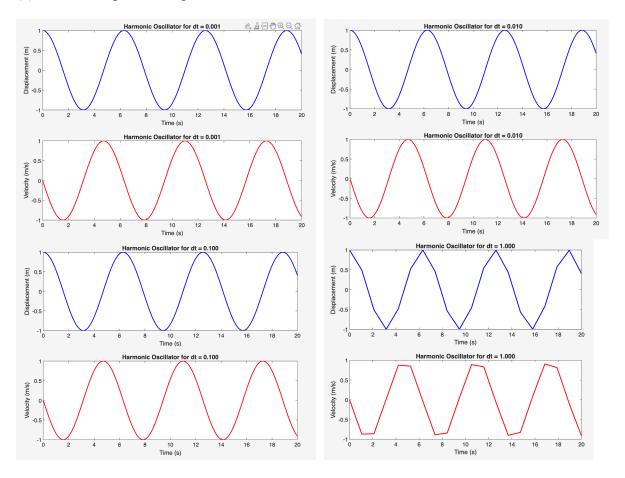


(c) ODE 45

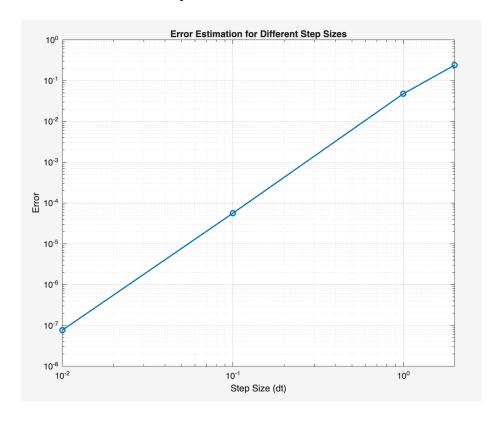


Jia Bhargava U20220046

(d) ODE 45 step size comparison

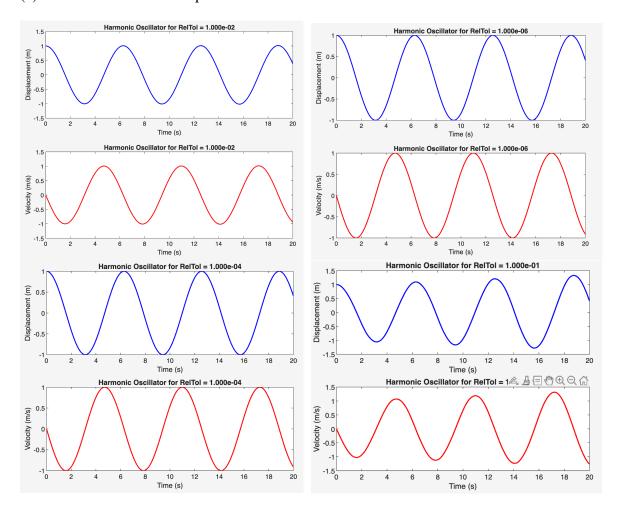


Error as a function of step size:

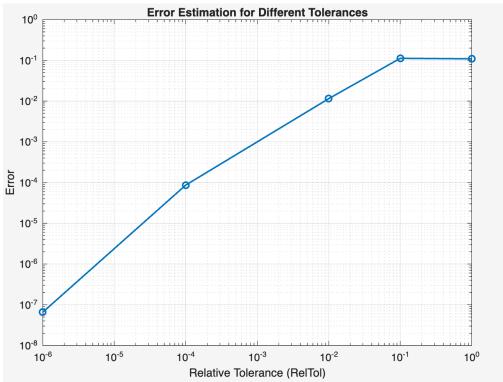


Jia Bhargava U20220046

(e) ODE 45 tolerances comparison



Error variation with tolerance



Jia Bhargava U20220046