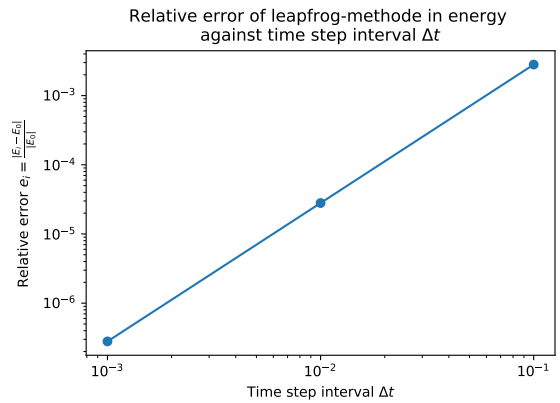
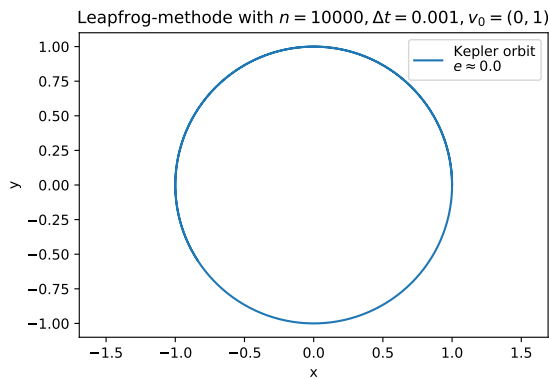
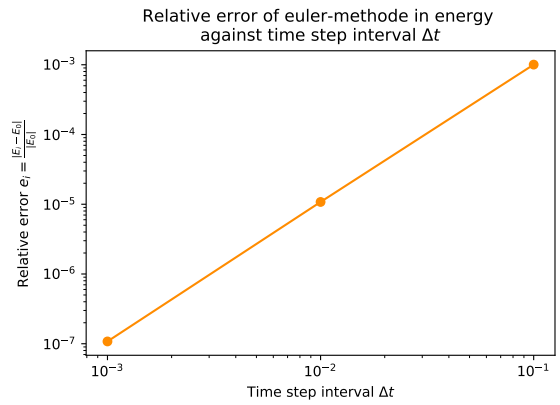
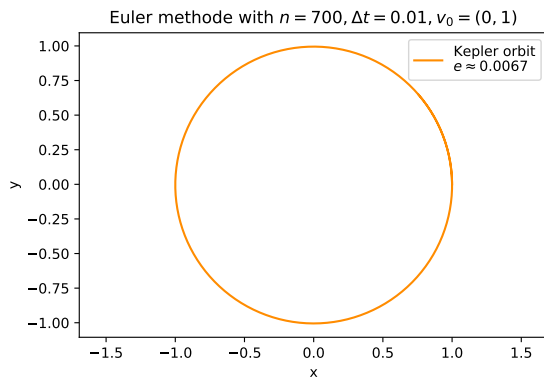


Exercises sheet 1
by Maximilian Richter and Christian Heppe

Exercise 5

a) (Orange) and b) (Blue)



In order to test the euler and the leapfrog methode, we evaluated the energy and compared the final energy with the initial energy for 3 different eccentricities (in our case we did that in a for-loop with different steps and timeintervalls (stepsizes)).

Both methodes satisfy our expectations pretty good, as expected, the relative error of the energy vanishes exponentially as we decrease the stepsize Δt logarithmically. For further details see the python-code in the appendix.