Homework 03

Problem 1 (5 points)

Prove that for an orbit governed by

$$\frac{p}{r} = 1 + e\cos(\theta)$$

the semiminor axis (b) is given by $p/\sqrt{1-e^2}$.

Problem 2 (5 points)

Plot an orbit in x,y coordinates for $p = 1$ and $e = .5$

Problem 3 (5 points)

Suppose two masses with $m_1 = 1$ and $m_2 = 1$ orbit each other, suppose also that the semimajor axis $a = 10^4$ m and the eccentricity e=0.2. Plot orbits of both masses on the same plot as they orbit each other.

Problem 4 (5 points)

Solve problem 2.12 from the text book.