



1. (10 points) **Problem 3.3.**
2. (10 points) **Problem 3.7.**
3. (10 points) **Problem 3.8.** If the term θ^3 is added in the equation of motion of the pendulum, the new period T reads

$$T = T_0 \left(1 - \frac{A^n}{8} \right)^{-\frac{1}{2}}, \quad (1)$$

where $T_0 = \sqrt{l/g}$. Find the power n by fitting your numerical data with this equation.