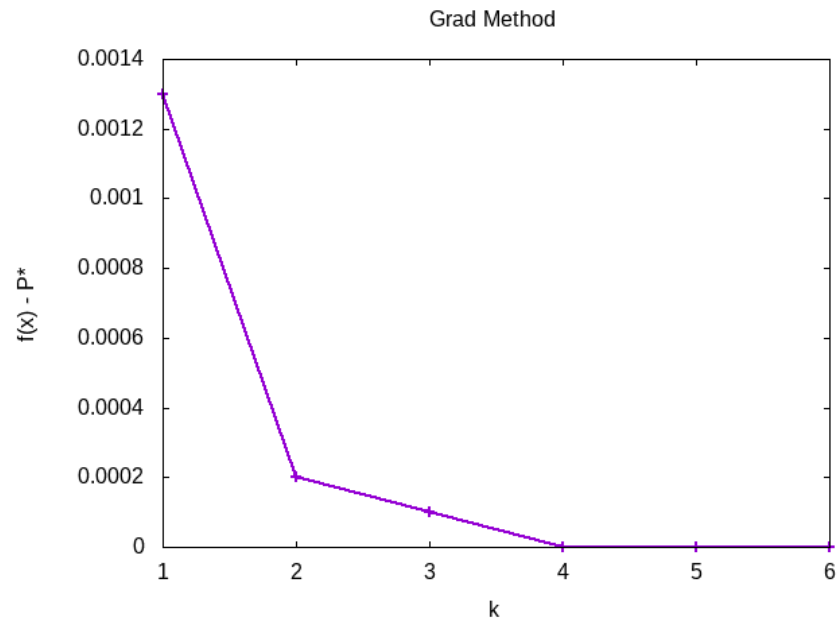# 1 Pr. 30

1.1 a) Gradient Method

The following is a graph of the convergence rate for the gradient method. Here A is a randomly generated 50x50 matrix that satisfied the given constraints. $\alpha = 0.02$, $\beta = 0.32$ and a calculated $P* = -.0013$.

1.2 b) Newton Method

I used the same parameters as above for Newton method, and the algorithm converged to $P*$ in two iterations rather than 6.