18.085 Computational Science and Engineering I
Fall 2008

18.085 MATLAB 2.2

This is about $Mu'' + Ku = 0$ with `M = [1 0; 0 4]` and `K = [4 -4; -4 16]`.

1. Find the eigenvalues λ_1, λ_2 and eigenvectors x_1, x_2 of $M^{-1}K$ by `eig(K,M)` and check that $x_1^{\mathrm{T}} M x_2 = 0$. They solve $Kx = \lambda M x$.

2. Use the **normalmodescode** to solve $Mu'' + Ku = 0$ starting from $u = (1, 0)$ and $u' = (0, 0)$. Find the solution vector u at $t = 1$ and $t = 2$.