M238 Mass Spring Homework Problems for Practice NOT turn in.

Solve the following mass spring system IV ODEs. Also convert to a system and determine the eigenvalues and eigenvectors. Also, use the chain rule to get an ODE for dv/du where v = u'. Setch a phase portrait for (u,v).

1) m = 1, f = 4, k = 3; u(0) = 1, u'(0) = 0
2) m = 2, f = 11, k = 15; u(0) = 0, u'(0) = 1