Last time: we wrote codes: lorenz.m
rk4singlestep.m

Now, we will investigate how to integrate many
initial conditions (trajectories) efficiently

**Idea 1:** use 'for' loop and integrate each
particle one-at-a-time.

* very slow in Matlab! Why?

Matlab scripts are not compiled, so every iteration
of the for loop, it re-translates your commands
into machine-code instructions.

**Idea 2:** Alternative is to **vectorize** computation, so all
particles are passed through vector field at
the same time.

* much faster (100-1000x for our example)
because matrix operations in Matlab
are built on LAPACK, a highly optimized,
compiled Fortran package.