1. Let $A = \begin{bmatrix} \dfrac{95}{44} & -\dfrac{21}{44} \\ \dfrac{7}{11} & \dfrac{1}{11} \end{bmatrix}$

   (a) Factor $A = PDP^{-1}$

   (b) Graph the longterm effects of D on each of the points $(2,3)$, $(-2,3)$, $(-2,-3)$ and $(2,-3)$.

   (c) On one set of axes, draw the eigenspaces of A and the flow lines for several points in each region determined by the eigenspaces.

   (d) Is the origin an attractor, a repeller, or a saddle point for the dynamical system determined by A?

2. (a) Find a non-diagonal 2×2 matrix A where the origin is an attractor.

   (b) Draw the eigenspaces of A and the flow lines for several points in each region.