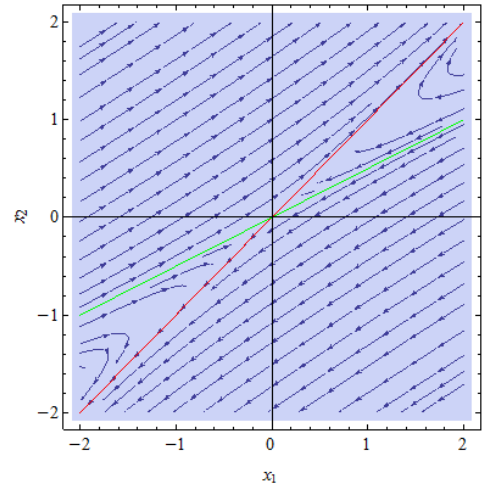
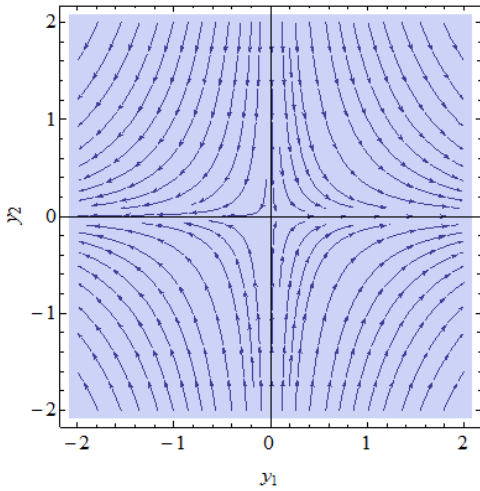
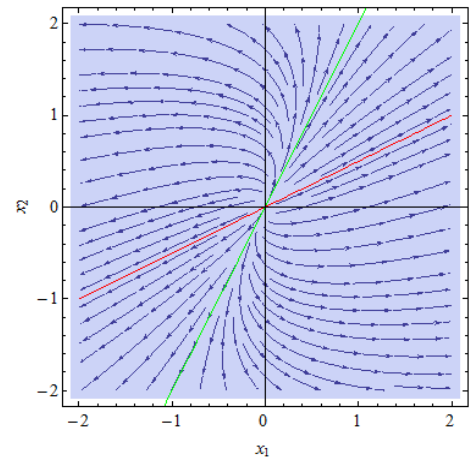
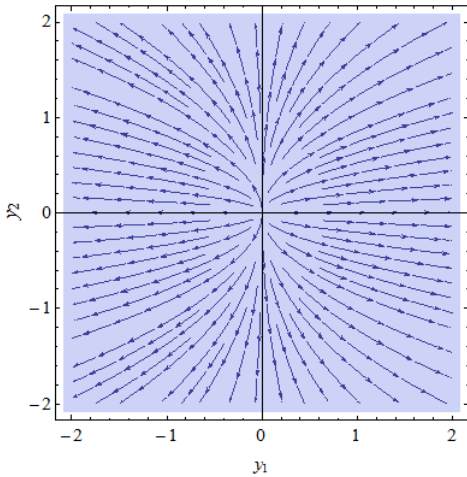


EXAMPLES OF PHASE DIAGRAMS OF TYPE I: $\lambda_1 \neq \lambda_2$ real and non-zero

1. Saddle: $\lambda_1 > 0 > \lambda_2$. Example: $A = \begin{pmatrix} -5 & 6 \\ -3 & 4 \end{pmatrix}$; $\lambda_1 = 1, \lambda_2 = -2$; $\underline{E}_1 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$ (green), $\underline{E}_2 = \begin{pmatrix} 1 \\ 1 \end{pmatrix}$ (red)



2. Stable node: $\lambda_1 > \lambda_2 > 0$. Example: $A = \begin{pmatrix} 7 & -2 \\ 2 & 2 \end{pmatrix}$; $\lambda_1 = 6, \lambda_2 = 3$; $\underline{E}_1 = \begin{pmatrix} 2 \\ 1 \end{pmatrix}$ (red), $\underline{E}_2 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ (green)



3. Unstable node: $0 > \lambda_2 > \lambda_1$. Example: $A = \begin{pmatrix} -1 & 0 \\ 2 & -2 \end{pmatrix}$; $\lambda_1 = -2, \lambda_2 = -1$; $\underline{E}_1 = \begin{pmatrix} 0 \\ 1 \end{pmatrix}$ (red), $\underline{E}_2 = \begin{pmatrix} 1 \\ 2 \end{pmatrix}$ (green)

