1. Transform the system below to matrix format. Use the eigenvalue method to solve the system showing all the steps. Make a simultaneous plot of all solutions. Use Maple to check your work and to graph.

\[ x' = -2x + y \]
\[ y' = x - 2y \]
\[ x(0) = 1, y(0) = 2 \]
2. Transform the system below to matrix format. Use the eigenvalue method to solve the system showing all the steps. Make a simultaneous plot of all solutions. Use Maple to check your work and to graph.

\[
\begin{align*}
    x' &= -0.5x + y \\
    y' &= -x - 0.5y \\
    x(0) &= 1, y(0) = -2
\end{align*}
\]
3. Transform the system below to matrix format. Use the eigenvalue method to solve the system showing all the steps. Make a simultaneous plot of all solutions. Use Maple to check your work and to graph.

\[
\begin{align*}
x' &= -2x - y + z \\
y' &= -y + z \\
z' &= 0.5z
\end{align*}
\]

\[
x(0) = 1, \ y(0) = -1, \ z(0) = -2
\]
4. Transform the system below to matrix format. Use the eigenvalue method to solve the system showing all the steps. Make a simultaneous plot of all solutions. Use Maple to get eigenvalues and eigenvectors and to check your work.

\[ \begin{align*}
  x' &= -2x - y + z \\
  y' &= x - y + z \\
  z' &= x + y + 0.5z
\end{align*} \]

\[ x(0) = 1, \ y(0) = 1, \ z(0) = 2 \]