

$$\begin{aligned} \dot{x}_1 &= 2x_2 \\ \dot{x}_2 &= -2x_1 \end{aligned} \quad x(0) = \begin{bmatrix} 1 \\ -1 \end{bmatrix} \Rightarrow \dot{x} = \begin{bmatrix} 0 & 2 \\ -2 & 0 \end{bmatrix} x$$

