

3. Consider the following system

$$\frac{dY}{dt} = \begin{pmatrix} 4 & 0 & 0 \\ 0 & 1 & -2 \\ 0 & 2 & -3 \end{pmatrix} Y$$

(a) Determine how the system decouples

(b) Find the general solution of the system

(c) Classify the system (source, sink, ...)