

Classify the following systems:

$$\textcircled{1} \begin{cases} \frac{dx}{dt} = x - 2y \\ \frac{dy}{dt} = 5x + y \end{cases}$$

$$\textcircled{2} \begin{cases} \frac{dx}{dt} = -x + y \\ \frac{dy}{dt} = x - 3y \end{cases}$$

$$\textcircled{3} \begin{cases} \frac{dx}{dt} = -2x + 5y \\ \frac{dy}{dt} = x - y \end{cases}$$

$$\textcircled{4} \begin{cases} \frac{dx}{dt} = y \\ \frac{dy}{dt} = -3x \end{cases} \quad M.$$