a) Find a Liapunov function for the equilibrium point $(0,0)$ of the following system

(1)
$$\begin{cases} x' = y + xy^2 \\ y' = -3x - 3x^2y - y^3 \end{cases}$$

Hint: Look for $L(x, y)$ of the form $ax^2 + by^2$.

b) **Extra credit:** Show that $(0,0)$ is a asymptotically stable equilibrium point of (1).