

$$\mu = 0$$

2.3

a)

$$\begin{aligned} \dot{x} &= -4y - x^3 \\ \dot{y} &= 4x + 2y^3 \end{aligned} \quad (1) \quad \Rightarrow \quad \omega = 4$$

$$\begin{aligned} \dot{x} &= y - x^2 \\ \dot{y} &= -x + 2x^2 \end{aligned} \quad (2) \quad \Rightarrow \quad \omega = -1$$

$$\begin{aligned} \dot{x} &= -\omega y + f(x, y) \\ \dot{y} &= \omega x + g(x, y) \end{aligned}$$

b)

$$\begin{aligned} \Rightarrow \quad f_{(1)} &= -x^3 & f_{(2)} &= -x^2 \\ g_{(1)} &= 2y^3 & g_{(2)} &= 2x^2 \end{aligned}$$