A3

Muscle mutual inhibition model

$$\dot{x} = \frac{(\frac{1}{2})^n}{(\frac{1}{2})^n + y^n} - x \qquad n : \text{positive integer}$$

$$\dot{y} = \frac{(\frac{1}{2})^n}{(\frac{1}{2})^n + x^n} - y$$

Construct phase plane plot for ① $n \leq 2$ and ② $n > 2$
Determine equilibrium points and bifurcation pattern.