1. Follow the instructions in Strogatz, Problem 3.1.1-4 for the system
   \[ \dot{x} = x + \frac{1}{x} - r. \]

2. Follow the instructions in Strogatz, Problem 3.2.1-4 for the system
   \[ \dot{x} = r^2 - \sinh^2(x). \]

3. Strogatz, Problem 3.3.1, (a)-(c).

4. Follow the instructions in Strogatz, Problem 3.4.1-4 for the system
   \[ \dot{x} = rx - x\sqrt{1 + x^2}. \]

5. Follow the instructions in Strogatz, Problem 3.4.5-10 for the system
   \[ \dot{x} = x^2 - 2 \left( \frac{1 + r^2}{1 - r^2} \right) x + 1, \quad |r| < 1. \]


7. Strogatz, Problem 3.6.4. For specificity consider the system
   \[ \dot{x} = r + hx - x^2, \]
   which for \( h = 0 \) is a normal form of the saddle-node bifurcation.

8. Strogatz, Problem 3.7.2.