Homework 6, due Wednesday, 26 May

Do the following problems in your textbook:
§47: 47.3

See Friday's lecture
Do opposite attract?
Let

$$\begin{aligned} R(t) &= \text{Romeo's love/hate for Juliet at time t} \\ J(t) &= \text{Juliet's love/hate for Romeo at time t.} \end{aligned}$$

Analyze the model:

$$\begin{bmatrix} \dot{R} \\ \dot{J} \end{bmatrix} = \begin{bmatrix} a & b \\ -b & -a \end{bmatrix} \begin{bmatrix} R \\ J \end{bmatrix}$$

Look at two cases, namely $\Delta < 0$ and $\Delta > 0$. Hint: the equilibrium point is either a center or a saddlepoint.