1. Text: 2.2.2
Ignore the book's instructions, however. Do the following

a) Draw a phase line.

b) Determine all equilibria and their stability.

c) Use this information to draw the time series.

d) Solve the equation exactly with the initial condition $x(0) = x_0$.

e) Use Octave to graph several characteristic solutions.

2. Text: 2.2.4
Same instructions as Problem 1.

3. Text: 2.2.5
Same instructions as Problem 1.

4. Text 2.2.22
Ignore the book's instructions.

a) Determine the number of equilibria. The answer will depend on whether $k > 0$, $k = 0$, or $k < 0$.

b) Draw phase lines for each of these cases.

c) Draw time series for each of these cases.

d) Draw a bifurcation diagram.

5. Text: 2.1.21

6. Text: 2.1.11