1. From the textbook: p.28 – 31, p.32 – 53, p.64 – 1abc, p. 67 – 7ab. These are odd problems and the answers are in the back. For this reason, I will not grade these problems, but they are still part of what you’re expected to do.

2. From the textbook: p.31 – 40, p.32 – 46, p.64 – 6 (when you draw it, use a different color to indicate the Hamiltonian circuit, not a wiggly line), p. 69 – 30.

3. Find an Eulerian circuit in the graph in the Eulerized graph from the bottom right of the first page of the Homework 1 solutions.

4. Draw connected graphs $G_1$ and $G_2$ with nine vertices each so that
   a. $G_1$ has an Eulerian circuit but $G_1$ doesn’t have a Hamiltonian circuit.
   b. $G_2$ has a Hamiltonian circuit but $G_2$ doesn’t have an Eulerian circuit.
   There are many, many correct answers to this problem!

5. This problem uses your number $N$. A sales representative needs to visit four cities in a Hamiltonian circuit. The cities are named, conveniently enough, A, B, C and D. The distance from A to B is 124 miles. The distance from A to C is $N$ miles. The distance from A to D is 181 miles. The distance from B to C is 140 miles. The distance from B to D is 110 miles. The distance from C to D is 102 miles.
   a. Represent this information in a graph very much like Figure 2.3.
   b. Find a Hamiltonian circuit starting at city A with minimal total mileage.

6. Eulerize the following graph and then draw an Eulerian circuit in your new version. It is not necessary for you to worry about finding the minimum number of new edges.