1. As a reminder, here is the quantum teleportation diagram we discussed in class:

Suppose that when Alice and Bob created their entangled pair of qubits back in graduate school, the qubits ended up in the state $BELL_{10} = \frac{1}{\sqrt{2}} |00\rangle - \frac{1}{\sqrt{2}} |11\rangle$, instead of the state $BELL_{00}$. How would this affect the quantum teleportation algorithm? Work out the steps required for Alice to teleport her qubit $|\psi\rangle$ to Bob in this case, showing clearly the intermediate 3-qubit states $|\varphi_0\rangle$, $|\varphi_1\rangle$, and $|\varphi_2\rangle$, and the actions that Bob should perform on his qubit in response to Alice’s measurement.

2. Read section 6.1 of the textbook (pages 170–179). Try working through Exercises 6.1.1, 6.1.2, and 6.1.3 on pages 172–173 as you go. You can check your answers in Appendix B of the book. You do NOT need to turn in your answers to these three exercises.