Master 3.6 Answer Key (Sample)
The Liver and Liver Transplants: Checking for Understanding

Check Facts

1. What does your liver do? List at least four different functions.
   - Stores vitamins, sugar, and iron to help give the body energy.
   - Controls the removal and production of cholesterol.
   - Clears the blood of waste products, drugs, and other toxins.
   - Makes clotting factors to stop bleeding after cuts or injuries.
   - Releases bile that helps digest food and absorb important nutrients.

2. Describe two causes of liver failure in adults.
   - Liver failure can be caused by cirrhosis, which can be caused by viruses, alcohol, buildup of fat in the liver, and inherited disease; cancer; benign tumors; and inherited disease.

3. Identify an action that you can take to help keep your liver healthy.
   - Stay away from excessive alcohol intake.

4. After a transplant, a patient must take medication.
   a) What are some of the side effects of the medications one must take after a liver transplant?
      - Immune suppression, risk of infections.
   b) Why are these medications necessary, despite the side effects?
      - You must partially suppress the patient’s immune system so it doesn’t reject the organ.

Apply Your New Knowledge

5. Why is geography important to consider? In other words, why might a hospital give a liver to a patient closer to the hospital, even if this patient has been waiting for less time or is not as sick as another patient who lives farther away?
   - A liver has the best chance of success when there is very little time between removing the organ from the deceased donor and transplanting the liver into the recipient. Usually, no more than 12 hours can pass.

6. Out of all of the people waiting for a liver in 2005, what percentage died while waiting for a liver transplant?
   - \((2,000/17,000) \times 100 = \text{about } 12\%\)
7. Suppose that you are giving a presentation to compare percentage survival in males vs. females one year, three years, and five years after a liver transplant from a deceased donor. Using the area below, prepare a line graph in which you show the relevant data.
   a) Consider which variable (number of years or percentage survival) you will place on the X (independent) axis and which variable you will place on the Y (dependent) axis. Label each axis, and decide on an appropriate scale.
   b) Make two lines, one for females and one for males. Color-code your lines (or make one dashed and one solid).
   c) Provide a descriptive title.

8. On the basis of your graph above, do you think that the patient’s sex (male vs. female) makes a small, medium, or large difference in terms of percentage survival over five years?
   *Small difference*