1. (3 points) Identify each of the following as a hypothesis, law, theory, or model.

   a. ____________ A statement made based on the observation that in all our measurements that have been made, energy seems to never be lost but only converted in form.

   b. ____________ The reasoning behind why it is anticipated that nothing can ever travel faster than the speed of light.

   c. ____________ A description of the particles of a gas being similar to billiard balls and their interactions.

2. (5 points) Identify each of the following as either a physical property or a chemical property.

   a. ____________ the element silver tarnishes forming the compound silver sulfide.

   b. ____________ the density of gold is 19.3 g/cm$^3$.

   c. ____________ ethyl ether is a liquid at room temperature.

   d. ____________ pounding lead with a hammer will flatten it out.

   e. ____________ sodium reacts violently with chlorine to form table salt.

3. (5 points) Identify each of the following as either a physical change or a chemical change.

   a. ____________ gasoline in a car is burned in the engine

   b. ____________ a block of solid benzene is converted to liquid benzene

   c. ____________ the brown color made by an inkjet printer is made by mixing the cyan, magenta, and yellow inks.

   d. ____________ an apple rots

   e. ____________ an egg is scrambled
4. (5 points) Identify each of the following mixtures as either homogeneous or heterogeneous.

   a. ____________  a strawberry
   b. ____________  orange juice with pulp
   c. ____________  the air in the room
   d. ____________  a salt water solution
   e. ____________  a wood-grained table top

5. (3 points) The HIV virus causes AIDS. Several expensive drugs are available to treat HIV and, used either separately or in combination, they have resulted in a huge drop in AIDS deaths. An expensive new drug is available that shows promise in treating HIV/AIDS patients and is especially promising in preventing passage of the HIV virus from a pregnant woman to her fetus. What is the desirability quotient (high or low) for each of the following situations for this new drug? Briefly explain your rationale.

   a.  a man who thinks he may be infected with HIV

   b.  a pregnant woman who is HIV positive

   c.  an unborn child whose mother has AIDS?