1. (5 points) Identify each of the following as a physical change or a chemical change.
   a. A standing puddle of water evaporates __________________________
   b. Nitrogen and hydrogen are combined to form ammonia, a key fertilizer component __________________________________________________
   c. A dime is cut in half _____________________________________
   d. Snow laying on the ground melts _____________________________________
   e. The element potassium is combined with chlorine to form a salt __________________

2. (5 points) Classify all of the properties in the following description as either a chemical property or a physical property.

   Potassium may be obtained from caustic potash (KOH) by using a technique known as electrolysis. Potassium is a metal that is silvery in appearance and is soft enough to be easily cut with a knife. Potassium reacts vigorously with water producing hydrogen gas and flames. Potassium is so reactive it is never found as the free element in nature. The density of potassium is 0.856 g/cm³, it melts at 336.65 K, and boils at 1062 K. On a typically used hardness scale, it rates at 0.5 Mohs.

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<thead>
<tr>
<th>Chemical Properties</th>
<th>Physical Properties</th>
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3. (5 points) Identify the following as pure substances or mixtures. Further, classify each pure substance as to whether it is an element or a compound and each mixture as to whether it is a homogeneous or heterogeneous mixture.

   a. 15 g of salt dissolved in 100 mL of water (one can dissolve at most 35 g of salt in 100 mL of water) ________________________________

   b. 40 g of salt dissolved in 100 mL of water (one can dissolve at most 35 g of salt in 100 mL of water) ________________________________

   c. The air in this room ________________________________

   d. The contents of a beaker containing water and gasoline ________________________________

   e. The contents of a helium balloon ________________________________

4. (5 points) Make the following conversions.

   a. 35.5 cm = ________________ m

   b. 12.5 kg = ________________ mg

   c. 76.5 mL = ________________ cm³

   d. $3.42 \times 10^8$ s = ________________ ks

   e. 0.00924 cm = ________________ mm