Scientific Method:
a) Describe the key steps of the scientific method.
   1. Observation – Development of a problem or question
   2. Explanation – Formulation of hypothesis
   3. Validation – Design & perform experiment to test hypothesis
b) Who is credited with establishing the scientific method for inquiry of the natural world? *(Note: this is not in the textbook...)*
   Ans. Galileo Galilei
c) What is the requirement for a hypothesis to be considered “scientific”?
   Ans. A hypothesis must be testable to be considered “scientific”.
d) Give an example of both a scientific and non-scientific hypothesis/statement.
   Ans.
e) Describe the difference(s) between a hypothesis and a theory.
   Ans. A hypothesis is an educated guess formulated to explain a natural phenomenon. A theory is a compilation of many verified hypotheses that together provide a general model of a natural phenomenon.
f) Describe the difference(s) between a scientific law and a theory.
   Ans. A scientific law is a general observation that has no known exceptions and is therefore considered to be a fact of nature. A theory is a general description of a natural phenomenon supported by substantial evidence but nevertheless is considered only a model not a fact.

Physical States of Matter & Classification of Matter:
a) Identify the 3 states of matter.
   Ans. (1) solids, (2) liquids, and (3) gases {we won’t consider plasmas and Bose-Einstein Condensates for the purposes of this class}
b) Succinctly describe the 3 states of matter.
   (1) Solid – definite shape and volume
   (2) Liquid – definite volume and indefinite shape
   (3) Gas – indefinite shape and volume
c) How is a pure substance different from a mixture?
   Ans. A mixture is an impure substance, a combination of more than 1 pure substance.
d) Describe the following:
   1. homogeneous mixture – a uniform mixture, has only 1 phase
   2. heterogeneous mixture – a non-uniform mixture, has more than 1 phase
   3. phase – a homogeneous region of a mixture separated from other phases by a physical boundary