Honors Chemistry Hour\_\_\_\_\_ Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Dr. Wexler  
How to be Successful in Chemistry: Practice Problems  
Date due: 9/15/15

1. What is the density of a substance that has a volume of 543mL and a mass of 24g. Show all work. Is this substance most likely a solid, liquid, or gas. Explain.
2. Decide if each of the following is a solid, liquid, or gas:
3. Water that has been sitting in the kitchen freezer overnight.
4. Water that is flowing in a river.
5. Clouds in the sky.
6. The air that we breath.
7. Water vapor.
8. Propane inside a propane tank.
9. Carefully describe how you know that the density of oil is less than the density of liquid water.
10. What is the density of a 350g cube whose sides are 5cm long? Show all work.
11. Explain why mixing compound H (D = 0.8g/mL) with water (D = 1.0g/mL) always results in a mixture that floats on water. Demonstrate this quantitatively.
12. Describe how it is possible to make a hot air balloon sink instead of rise:
13. Write a statement regarding chemistry or chemicals that is usually true but may have exceptions. Give an example of an exception to your statement.
14. Write a statement regarding chemistry or chemicals that is always true without any exceptions.
15. Why does milk expand when frozen? Be specific.
16. How can you tell if a change in a substance is a physical change or a chemical change?
17. Is a compound a mixture of atoms? Explain.
18. What is 5/25 equal to?
19. Does air have mass? Explain how we know.
20. Can the volume of air be measured with a graduated cylinder? Explain.
21. If a block of ice has a volume of 670cm3, what is its volume in milliliters?