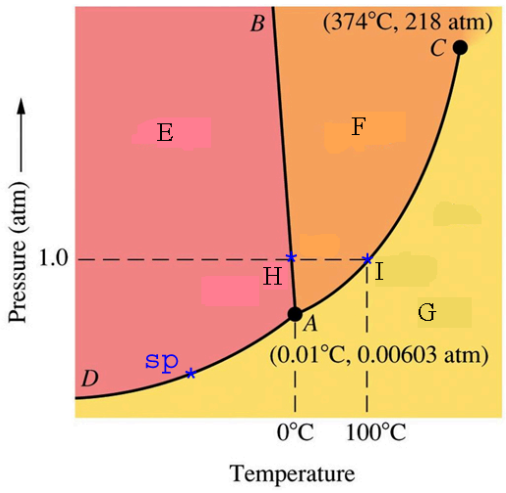
Name: _____

Unit 5 Study Guide (Chapter 13, 14, and 15)

***Chapter 13:**Study all vocabulary for Chapter 13!**

1. What is the SI unit for pressure?
2. What is the SI unit for temperature?
3. What is absolute zero?
4. What is a glass?
5. Convert 817.3 kPa to mm Hg.
6. How does atmospheric pressure change with altitude?
7. What happens to the boiling point of a liquid if vapor pressure is increased? If vapor pressure is decreased?
8. How do the melting points of ionic and molecular compounds compare?
9. How does the rate of evaporation compare to the temperature of a liquid?
10. When the solid state and liquid state are in equilibrium, how does the rate of melting compare to the rate of solidification (freezing)?
11. What are the 4 assumptions of the kinetic theory?
12. Over time, how does vapor pressure change in a sealed container?
13. If external pressure is 1.5 atm, then what is the vapor pressure of water at the boiling point?
14. Which states of matter contain particles that are moving?
15. How is evaporation a cooling process?
16. What does a line represent on a phase diagram?
17. Label the following points on the phase diagram:
    A, E, F, G, H, and I.



Chapter 14:*Study all vocabulary for Chapter 14!****

18. What does STP stand for and what are its values?

19. Fill in the following chart.

Chemist	Properties Studied (P, V, or T)	

20. Are the following properties directly or indirectly proportional?
    a. volume and temperature
    b. pressure and temperature
    c. volume and pressure
21. Fill in the blanks.
    a. If pressure is doubled, volume is _____.
    b. If temperature decreases, pressure _____.
    c. If temperature is tripled, volume is _____.
22. If the pressure of a gas increases from 1.2 atm to 2.4 atm, what happens to the volume?
23. If the temperature of a gas increases from 50°C to 100°C, what happens to the pressure?
24. Convert 36°C to K.
25. Convert 1390mL to L.
26. Convert 38.7g of CO_2 to moles.
27. A diver blows a 0.75L air bubble under water. As it rises to the surface, the pressure goes from 2.25 atm to 1.03 atm. What will the volume of the bubble be at the surface?
28. If a gas was originally at 790 mm Hg and was heated to 183°C making its pressure increase to 840 mm Hg, then what was the original temperature?
29. How many grams of SO_3 gas occupy a container at 1.7 atm, 63°C, and 8.6L?
30. A gas occupied 125mL at 207kPa and 323K. If the temperature decreased to 298K and the volume decreased to 98mL, then what was the new pressure?

31. A helium balloon occupies a volume of 2.32L at 40°C. If the balloon expands to 2580mL, then what is the final temperature?

Chapter 15:*Study all vocabulary for Chapter 15!**

32. Why does water have a high surface tension and a low vapor pressure?
33. Why is ice less dense than water?
34. Label the δ+ and δ- sides of a water molecule.
35. How does an ionic solid dissolve in water? (Draw a diagram.)