CST Review Name_____

Topic 7 – Gases and their Properties Date_____ Per_____

1. What causes gas pressure in terms of kinetic theory?
2. Describe the motion of gas particles; include the 3 main assumptions of the kinetic theory.
3. If someone sprays perfume at the front of the room, will the people in the back of the room eventually be able to smell it? Why? Explain completely.
4. What will happen to the pressure on an object when you move to a higher altitude (ex. top of a mountain)? What will happen to the boiling point of water?
5. What values represent standard temperature and pressure (STP)?
6. What is absolute zero? What happens at this temperature? Are there any temperatures below absolute zero?
7. Convert the following.
    a) 100 °C to K

    b) 250 K to °C

    c) -35 °C to K

    d) 50 K to °C

    e) 273 K to °C

8. How does changing the amount of gas, volume of gas, and temperature affect the gas pressure?

<u>For Q's #9-14, name the gas law and show all your work.</u>

9. The pressure on 2.00 L of anesthetic gas changes from 100 kPa to 40 kPa. What will be the new volume if the temperature remains constant?

10. A gas with a volume of 450 mL at a pressure of 1.8 atm is allowed to expand to a volume of 800 mL. What is the pressure in the container if the temperature remains constant?

11. If a sample of gas occupies 6.55 L at 300 °C, what will be its volume at 25 °C if the pressure does not change?

12. Exactly 600 mL of air at -45.0 °C is warmed to 115 °C. What is the new volume if the pressure remains constant?

13. A gas at 790 mm Hg and 25 °C occupies a container with an initial volume of 1.20 L. By changing the volume, the pressure of the gas increases to 1500 mm Hg as the temperature is raised to 125 °C. What is the new volume?

14. A 500 mL air sample at a temperature of -50 °C has a pressure of 1.3 atm. What will be the new pressure if the temperature is raised to 102 °C and the volume expands to 700 mL?