

Big Chem: Unit 15 Kinetic Theory, Atmos. Pressure

PRINT Name _____ Period _____

Hint for Probs 5-8: Use the formula, $K = C + 273$, so $C = K - 273$.

1. Convert the following temperatures from Celsius to Kelvin:
a. 87° , b. 16° , c. 59° , d. -68° , e. 73° . *Hint: watch your signs!*
2. Convert the following temperatures from Kelvin to Celsius:
a. 86° , b. 191° , c. 533° , d. 318° , e. 894° .
3. Suppose you have two vials, one containing ammonia and containing chlorine. When they are opened across the room which would you expect to smell first and why? *Hint: Graham's Law of Diffusion relates velocity of molecules with molecular mass (heavier molecules move more slowly).*
4. With regard to particle motion, what are the differences in the states of matter? *Hint: Which moves fastest, solid, liquid, or gas molecules?*
5. How does temperature affect the kinetic energy of a particle?
6. In terms of the kinetic theory, what is the significance of absolute zero?
7. What is an elastic collision? How does it differ from an inelastic collision? *Hint: Molecules collide with elastic collision which means that no energy is lost. Bam, bam, biff, biff continues indefinitely. A pie in the face is inelastic.*
8. What is the Kinetic Theory of Matter and list 9 evidences supporting the Kinetic Theory.
9. How did Torricelli discover atmospheric pressure?
10. How can we find the density of air and what is its value in g/L?
11. Give the values for one Atmosphere of pressure (sealevel average) in
a) meters of water, b) millimeters of mercury, c) kilograms/cm², and
d) kilopascals.
12. Describe the demonstration of the Magdeburg Hemispheres and tell what they inform us.
13. What is the true meaning of *suction*?

STAPLE THIS PAPER TO YOUR PAPERS (at home).
Turn in at the Beginning of the Period when due.