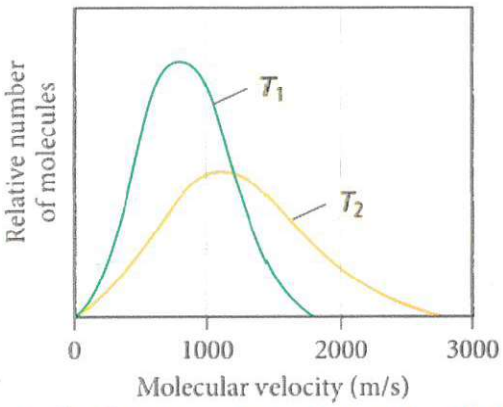


1. A sample of gas at constant pressure is graphed at two different temperatures. Which of the following must be true?

A) T_1 is a higher temperature.

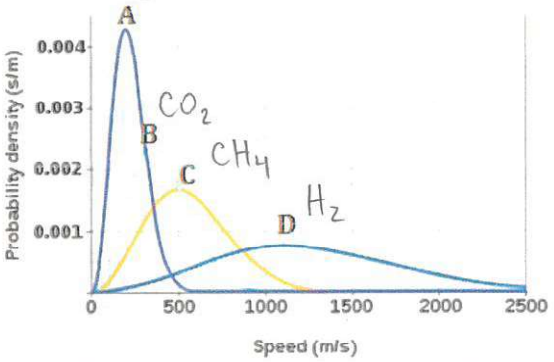
B) T_2 is a higher temperature.

C) The gas becomes lighter.

D) The gas becomes heavier.

6

heaviest
SF_6



2. The Maxwell-Boltmann distribution above analyzes a sample of a mixture of carbon dioxide, methane (CH_4), sulfur hexafluoride, and hydrogen gases. The analysis was performed at a constant temperature and pressure. Which answer correctly assigns each curve to its appropriate gas?

A) hydrogen-A; methane-B; carbon dioxide-C; sulfur hexafluoride-D

B) hydrogen-A; carbon dioxide-B; methane-C; sulfur hexafluoride-D

C) sulfur hexafluoride-A; methane-B; carbon dioxide-C; hydrogen-D

D) sulfur hexafluoride-A; carbon dioxide-B; methane-C; hydrogen-D

3. The kinetic molecular theory predicts that pressure rises as the temperature of a gas increases because:
   a. the gas molecules collide more frequently with the wall
   b. the gas molecules collide less frequently with the wall
   c. the gas molecules collide more energetically with the wall
   d. the gas molecules collide more frequently and more energetically with the wall

4. A sealed flask contains $O_2(g)$, $SO_2(g)$, and $SO_3(g)$ at 25°C. Which gas molecules will have the highest velocity and why?
   a. The O_2 molecules, because they have the least mass.
   b. The O_2 molecules, because they are the smallest.
   c. The SO_3 molecules, because they have the most mass.
   d. Molecules of all three gases will have the same speed because they are at the same temperature.

5. Under which of the following conditions will gases in a sealed container most deviate from ideal conditions, and why?
   a. Low pressure, because the gas molecules would be spread far apart.
   b. High pressure, because the gas molecules will be colliding frequently.
   c. Low temperature, because the attractive forces between the gas molecules would be more significant.
   d. High temperature, because the gas molecules are moving too fast to interact with each other.

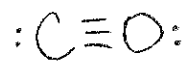
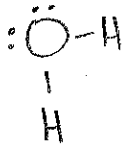
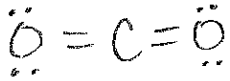
6. Because the ideal gas law doesn't include a factor for the volume of gas particles, actual gas volume is _____ the volume predicted by kinetic molecular theory.

   (a.) larger than c. equal to
   b. smaller than d. unable to be compared to

7. Because the ideal gas law doesn't include a factor for the attraction between gas particles, actual gas pressure is _____ the pressure predicted by kinetic molecular theory.

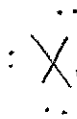
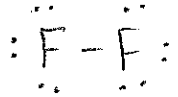
   a. larger than c. equal to
   (b.) smaller than d. unable to be compared to

More Practice!

CO	H_2O	CO_2
Lewis dot structure: 	Lewis dot structure: 	Lewis dot structure: 
Molecular geometry: linear	Molecular geometry: bent	Molecular geometry: linear
Molecular polarity: polar	Molecular polarity: polar	Molecular polarity: non-polar

Which of the molecules above shows the most significant deviation from ideal gas behavior and why?

H_2O, b/c it is the most polar + exhibits the strongest IMFs between the 3 particles.

Xe	F_2	He
Lewis dot structure: 	Lewis dot structure: 	Lewis dot structure: 
Molecular geometry: n/a	Molecular geometry: linear	Molecular geometry: n/a
Molecular polarity: non-polar	Molecular polarity: non-polar	Molecular polarity: non-polar

Which of the species above shows the most significant deviation from ideal gas behavior and why?

Xe, b/c it has a very large e^- cloud + thus has strong LDFs.