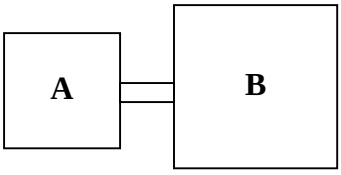
Chapter 12 Worksheet

1) There's a popular carnival game in which contestants try to guess the number of jelly beans inside a glass jar. You have entered a similar contest in which you must guess the number of air molecules inside of a 1 liter jar. What assumptions could you make about the pressure and temperature that would allow you to make a calculation and improve your chances of winning? What is your guess for the number of molecules?

2) Container **A** holds 1 L of gas at 2.5 atm. Container **B** holds 2 L of gas at 3 atm. If the two containers are connected with a tube and the gases are allowed to mix together, what is the new pressure? Hint: find the new pressure for each gas individually, then add them together.



Answers

1) approximately 2.5×10^{-22} molecules
2) 2.83 atm