

AST 301
Homework #7
Due Friday Oct. 31

1. Go to Phet.colorado.edu.
Choose Play with sims...
Choose Physics, Heat & Thermo (on the left)
Choose Gas Properties
Choose Run Now!
Pump the handle!
Describe what you see.
Read the pressure. Write down the average of a few measurements.
Read the temperature.
Use the Heat Control to turn up the heat to double the temperature.
How do the atom motions change?
Measure the pressure again. How did it change? Why?
Turn the temperature back down and double the number of atoms in the box. Use light atoms this time.
How do the light atoms' motions differ from the heavy atoms?
How does the pressure change?
Go to Advanced Options and turn off collisions. Does anything change?
Turn collisions back on.
Hold the temperature constant (upper right) and turn on gravity.
How does the distribution of atoms in the box change? Turn off gravity.
Go back to Constant Parameters: None, and slowly slide the wall of the box in. How do things change?
What else can you do with the simulation?