**PH115 Lab 3: ideal gases**

For this lab, we will use the applet at <https://phet.colorado.edu/en/simulation/gases-intro>

Part 1: exploring variables

* Load the applet and choose “intro”
* Add some particles to the box (using the pump)
* How do you change the pressure (P)? Which variables influence it for a fixed number of particles (N)?
  + How does the pressure depend on the other variables?
    - Volume (V)? Change the size of the box.
    - Particle number (N)? Open the box.
    - Temperature (T)?
* What changes when you add more particles?

Part 2: interdependence of variables

* Go to the “laws” portion of the applet (bottom of window)
* Add some particles to the box
* Keep the volume (V) constant. What happens if you raise the temperature (T)?
* Keep the temperature (T) constant. What happens if you change the volume?
* Fix P V, and add heat (change temperature). What happens?
* Fix P T and change the size of the box. What happens?

What is the overall relationship between the variables P, V, N, T?