

Physics 2a, Fall 2013. Week 5 exercises

★ Some of these (especially the even ones) will be solved in lecture and / or TA discussion or problem sessions.

● **First law of Thermodynamics chapter:** 1, 2, 7, 8, 9, 22, 23, 29, 31, 35, 37, 41, 46, 47, 48, 63.

● Additional question: an ideal gas is in an insulated container, and has initial pressure $p_i = 1\text{atm}$, volume $V_i = 1\text{m}^3$, and temperature $T_i = 300\text{K}$. The container suddenly undergoes free expansion to volume $V_f = 2\text{m}^3$. What is the final temperature T_f and pressure p_f ?