

Handin Homework 5: Physical Chemistry
Entropy-- Chapter 4

1. Is it more efficient to fly in the summer or winter?
2. On a really hot day, is it possible to cool the kitchen by opening the refrigerator door?
(assume the air in the room is well-mixed and that you check the temperature an hour after you open the door)
3. Calculate the change in entropy for one mole of a diatomic ideal gas ($C_v = 5/2 nR$) that is heated and compressed from 25°C and 10 L volume to 100°C and 1 L volume.
4. One mole of an ideal gas is expanded isothermally and irreversibly from a volume of 1 liter to a volume of 5 liters against a constant external pressure of 1 atm. The temperature is 298 K. Calculate the change in entropy for the system and the change for the surroundings.