# Open Chemistry Online – Post Quiz #8 (OpenStax Ch: 9.1 - 9.2)

A sealed 2.00L sample of gas initially at 540.0 mmHg is allowed to reach atmospheric pressure via an isothermal (constant temperature) volume change. Assume the atmosphere has a pressure of 1.00 atm.

1. As it reaches atmospheric pressure, will this sample be expanding or contracting? Explain briefly without using a calculation.
2. Calculate the final volume of the sample.
3. If the temperature the gas has been held at is 20 oC, calculate the volume if we now warm the sample which is now at atmospheric pressure to 40 oC via an isobaric (constant pressure) volume change.
4. Calculate the moles of gas in the sample. Assuming this gas is helium, calculate the mass of the gas sample.