

Section 2B Review

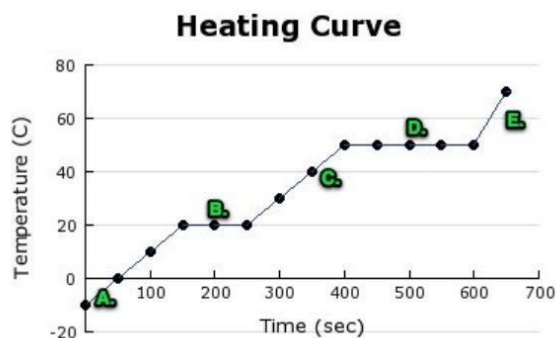
1) A rigid gas cylinder with a volume of 49 liters is filled with propane gas at 31 °C and has a pressure of 6.0 atmospheres. Calculate the number of moles of propane in the cylinder. Show all work.

2) A 22.2 gram sample of methane gas (CH₄) was placed in a 30-L container at 273K. Calculate its new pressure.

3) Calculate the temperature of 1.02 moles of methane in a 48.0-liter cylinder at 1.40 atmospheres.

4) Using the following heating curve, fill in the table:

Part of the curve	State(s) of Matter	Process that is happening	Temperature Range
A			
B			
C			
D			
E			



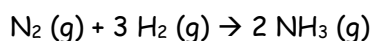
5) Summarize the five parts of the Kinetic Molecular Theory, in your own words.

6) Earth's atmosphere is composed of a mixture of gases. List the three most plentiful gases found in the atmosphere.

7) List three changes in the atmosphere as the altitude increases from sea level to high altitude.

8) Sketch and label the four layers of the atmosphere.

9) This equation represents the production of ammonia (NH₃) by the reaction of nitrogen gas with hydrogen gas:



a) If 1 mol N₂(g) reacts with 3 mol H₂(g) in a flexible container at constant temperature and pressure, would you expect the total gas volume to increase or decrease? Why?

b) How many moles of NH₃ would form if 12.0 mol N₂ react completely with hydrogen gas?

10) In a chemical reaction, 1 L hydrogen gas (H₂) reacts with 1 L chlorine gas (Cl₂) to produce 2 L hydrogen chloride gas (HCl). All volumes are measured at the same temperature and pressure.

a) Write a balanced chemical reaction.

b) If 19 L of H₂ gas react, how many liters of Cl₂ gas will need to react with it? How many liters of HCl gas will be made?

11a) Draw a homogeneous mixture of three different compounds.

11b) Draw a heterogeneous mixture of a compound and an element.