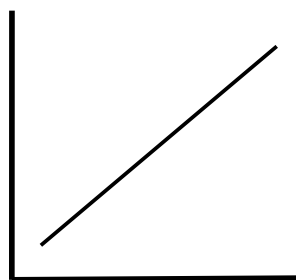


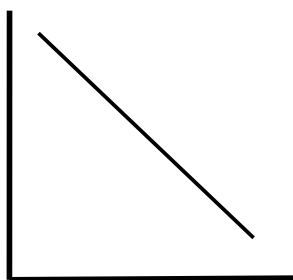
Section 4A Review

Name: _____

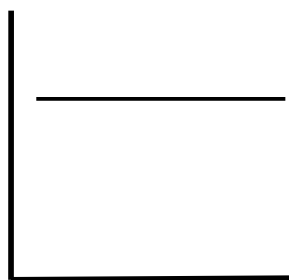
1) Match each of the relationships below with an appropriate graph. Each number can be used once, more than once, or not at all.



1



2



3

- a) the relationship between gas pressure and its temperature
- b) the relationship between gas volume and its pressure
- c) the relationship between gas temperature and its volume
- d) the relationship between gas volume and its number of moles

Answers: a) _____
 b) _____
 c) _____
 d) _____

2) Use the KEY to answer the questions that follow.

As a gas is compressed in a cylinder:

- a) the distance between gas particles _____
- b) the number of gas particles _____
- c) its volume _____
- d) its pressure _____
- e) its density _____
- f) its mass _____

KEY: 1) Increases
 2) Decreases
 3) Stays the same

3) Fill in the correct numbers for the following sentences.

- a) Standard temperature is _____ degrees Celsius.
- b) Standard pressure is _____ torr.
- c) Absolute zero is _____ Kelvin.

4) Fill in the chart below. Show work in the space below the table and use units.

	Pressure	Temperature	Moles	R	Volume
a)	1.02 atm	300 K	0.81 mol	0.0821 atm L/mol K	
b)	762 mmHg		2.16 mol	0.0821 atm L/mol K	48.3 L
c)	101 kPa	0 °C		8.314 Pa m ³ /mol K	22.4 m ³
d)		20 °C	0.38 mol	8.314 Pa m ³ /mol K	6.76 m ³

5) The gas in a balloon has a volume of 4.00 L at 100 kPa. The balloon is released into the atmosphere, and the gas in it expands to 8.00 L. What is the pressure on the balloon at the new volume.

6) If the temperature of a 2.50 m^3 sample of gas is 20°C , what volume would the gas occupy at 127°C ?

7) A sample of gas has a pressure of 1.5 psi at 10 K. What will be the new temperature at constant volume if the pressure is increased to 45 psi?

8) A sample of CO occupies 45 m^3 at 750 K and 1450 torr. What is the volume at STP?

9) A gas is collected in a lab in a container that is 2.0 L. The conditions of the lab are 104 kPa and 15°C . The gas has a mass of 6.60 g. What is the molar mass of the gas?

10) Calculate the number of grams in 16.0 L of CH_4 at 300 K and 500 mm Hg.

11) A sample of ethane initially occupies 0.850 L at 50 kPa and 227°C is compressed to a volume of 150 mL. To what temperature will the gas need to be cooled to lower the pressure to 6.9 psi?

12) The atmospheric pressure of the room is 745 torr. If the air is made up of nitrogen and oxygen, and the partial pressure of the oxygen is 164 torr, what is the partial pressure of the nitrogen?

Answers to Problems:

4a) 19.6 L 4b) 273 K 4c) 997 mol 4d) 137 Pa 5) 50 kPa 6) 3.41 m^3
7) 300 K 8) 31 m^3 9) 76 g/mol 10) 6.84 g 11) 83.9 K 12) 581 torr