

CHE 101 - Homework - Ch 8a  
Units and Conversions

p. 252-264

Score: \_\_\_\_/40

Name: \_\_\_\_\_

Date: \_\_\_\_\_

[5 pt] 1. Perform the following conversions. Include the proper units and Significant Figures in your answers.

(a) Convert 250,000 Pa to atm. 1(a) \_\_\_\_\_

(b) Convert 0.75 atm to torr. 1(b) \_\_\_\_\_

(c) 179 mm Hg to atm 1(c) \_\_\_\_\_

(d) 6.00 Pa to mm Hg 1(d) \_\_\_\_\_

(e) Convert 352 torr to kPa. 1(e) \_\_\_\_\_

[5 pt] 2. Perform the following conversions. Include the proper units and Significant Figures in your answers.

(a) Convert 22.0 °C to K 2(a) \_\_\_\_\_

(b) Convert 200. K to °C 2(b) \_\_\_\_\_

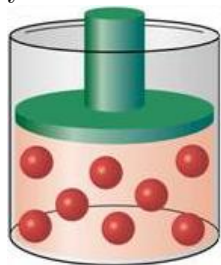
(c) Convert 99.5 °F to °C 2(c) \_\_\_\_\_

(d) Convert 20. °C to °F 2(d) \_\_\_\_\_

(e) Convert 75 °F to K 2(e) \_\_\_\_\_

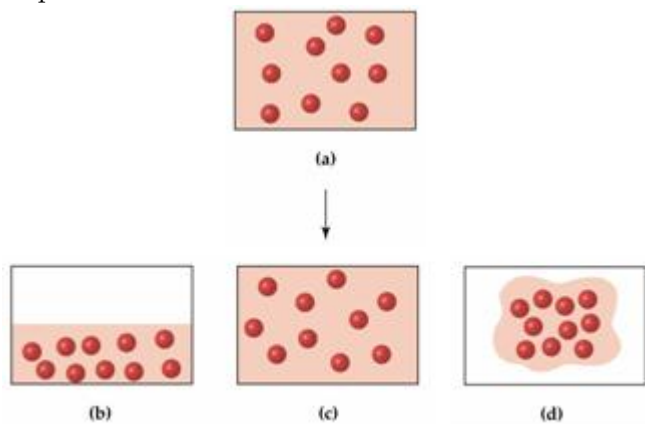
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- [6 pt] 3. Assume that you have a sample of gas in a cylinder with a movable piston, as shown below. Will the piston move up or down after each of the following changes are made. Explain, and include who's law you used to determine the answer.



- (a) The temperature is increased at constant pressure and amount of gas. 3(a) \_\_\_\_\_
- (b) The atmospheric pressure is increased at constant temperature and amount of gas. 3(b) \_\_\_\_\_
- (c) One half of the molecules are removed at constant temperature and pressure. 3(c) \_\_\_\_\_

- [4 pt] 4. Assume you have a sample of gas at 350 K in a sealed container of fixed volume, as represented in (a) below. Which of the drawings below represents the gas after the temperature is lowered to 100 K? Explain.



4. \_\_\_\_\_

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- [4 pt] 5. A sample of gas at 0.75 atm occupies a volume of 400. mL. What is the new volume 5. \_\_\_\_\_ (in mL) if the pressure is increased to 1.5 atm?
- [4 pt] 6. A balloon holds 15.0 mols of Helium gas with a volume of 336 L. How many mols 6. \_\_\_\_\_ of gas must be let out of the balloon to decrease its volume to 75.0 L?
- [4 pt] 7. A sample of gas occupies a volume of 525 mL at 45 °C. What will the new temper- 7. \_\_\_\_\_ ature (in °C) be when the volume is increased to 1500.0 mL?
- [4 pt] 8. A scuba cylinder at 3000. PSI at 25 °C is heated to 65 °C. What is the pressure of 8. \_\_\_\_\_ the cylinder in mm Hg?
- [4 pt] 9. A sample of gas occupies a volume of 5.5 gallons at 400. mmHg. What will the new 9. \_\_\_\_\_ pressure (in atm.) be when the volume is changed to 100.0 mL?