

Name \_\_\_\_\_ Instructor name \_\_\_\_\_

**You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.**

1. (a) How is an ideal gas different from a real gas? (b) For gas with a constant mass,  $nR$  in the ideal gas equation is constant. What can you say about the relationship between pressure, volume, and temperature? (c) Write an expression for the relationships between  $P$ ,  $V$ , and  $T$  to describe two states of the same gas at two different times. (10 pts)

2. A boy places his inflated birthday balloon inside the refrigerator (so nobody steals it). What will happen to the balloon? Please give a detailed explanation. (3 pts)

3. A 16.00 *liter* cylinder contains oxygen at 26.0°C and 109 *kPa*. If the temperature increases by 21.5°C, what is the final pressure of the gas? (7 pts)