

Under Pressure WS

Name: _____

1) Convert:

a) 0.200 atm _____ mm Hg b) 78.0 kPa _____ atm

c) 780. torr _____ atm d) 153,000 Pa _____ atm

2) Make the following temperature conversions:

a) 273 K = _____ °C b) 100 °C = _____ K c) 25 °C = _____ K

d) 0 K = _____ °C e) 0 °C = _____ K f) 300. K = _____ °C

3) Absolute zero is the coldest possible temperature.

a) What is occurring to the molecular or atomic motion at absolute zero?

b) What is the value of absolute zero in Kelvin and Celsius? _____ K or _____ °C

4) Standard Temperature and Pressure (STP) is used by chemists to standardize the study of gases.

Give the values for STP in the following units:

_____ °C _____ atm

_____ K _____ mm Hg

5) At STP, oxygen gas has a density of 1.43 g/L. How many moles of oxygen are in a liter at STP?

6) At STP, nitrogen gas has a density of 1.25 g/L. How many moles of nitrogen are in a liter at STP?

7) What do you notice about your answers for #5 and #6? Explain what this means in terms of moles of a gas in a liter at a given temperature and pressure.

8) Where is atmospheric pressure the greatest? Why?