

## Worksheet Gas Laws Chapter 12

### Boyle's Law ( page 440 )

- \_\_\_\_\_ 1. A gas has a volume of 300 ml at 300 mm Hg. What will its volume be if the pressure is changed to 500 mm Hg? (180)
- \_\_\_\_\_ 2. A gas has a volume of 460 ml at 500 mm Hg. What will be the volume at 1.2 atm? (252.2)
- \_\_\_\_\_ 3. A gas has a volume of 5 liters at 3 atm. To expand the volume to 7500 ml, what the new pressure ( in atm ) have to be? (2)
- \_\_\_\_\_ 4. Change 300 mm Hg to atmospheres. (.39)

### Charles' Law ( page 445)

- \_\_\_\_\_ 5. A gas has a volume of 4 liters at 50 °C. What will its volume be (in liters) at 100°C? (4.6)
- \_\_\_\_\_ 6. A gas has a volume of 350 ml at 45°C. If the volume changes to 400 ml, what is the new temperature? ( answer in °C ) (90.4)
- \_\_\_\_\_ 7. Explain what a graph of volume vs temperature looks like. (straight line)

### Combined Gas Law ( page 450 )

- \_\_\_\_\_ 8. A gas has a volume of 39 liters at STP. What will its volume be at 4 atm and 25°C? (10.6)
- \_\_\_\_\_ 9. 400 ml of a gas is contained at 300 mm Hg and 0°C. What will its volume be in ml at 140 mm Hg and 10°C? (888.5)
- \_\_\_\_\_ 10. 500 ml of gas is contained at STP. The volume changes to 560 ml at 20°C and what pressure ( in atm )? (0.96)
- \_\_\_\_\_ 11. A gas is contained at 100°C and 760 torr. If its volume is 3.5 liters at 110°C and 850 torr, what was its original volume in liters? (3.8)

### Ideal Gas Equation ( page 466 )

- \_\_\_\_\_ 12. 3.5 moles of oxygen are held at 3 atm of pressure and 300K. What is the volume of the oxygen? ( 28.7)
- \_\_\_\_\_ 13. Nitrogen is contained in a 300 ml vessel at 400 mm Hg and 10°C. How many grams of nitrogen( N<sub>2</sub> )are in the vessel? (0.2)
- \_\_\_\_\_ 14. 46 grams of hydrogen ( H<sub>2</sub> ) is held in a vessel at 20°C and 800 torr. What is the volume of the vessel in ml? (5.3 X 10<sup>5</sup>)