

## Ideal Gas Law Worksheet $PV = nRT$

Use the ideal gas law, “ $PV = nRT$ ”, and the universal gas constant  $R = 0.0821 \frac{L \cdot atm}{K \cdot mol}$  to solve the following problems:

If pressure is needed in kPa then convert by multiplying by  $101.3 kPa / 1 atm$  to get

- 1) If I have 4.00 moles of a gas at a pressure of 5.6 atm and a volume of 12 liters, what is the temperature?
- 2) If I have an unknown quantity of gas at a pressure of 1.2 atm, a volume of 31 liters, and a temperature of  $87.0^{\circ}C$ , how many moles of gas do I have?
- 3) If I contain 3.0 moles of gas in a container with a volume of 60. liters and at a temperature of 400 K, what is the pressure inside the container?
- 4) If I have 7.7 moles of gas at a pressure of 0.090 atm and at a temperature of  $56^{\circ}C$ , what is the volume of the container that the gas is in?
- 5) If I have 17.0 moles of gas at a temperature of  $67.0^{\circ}C$ , and a volume of 88.89 liters, what is the pressure of the gas?
- 6) If I have an unknown quantity of gas at a pressure of 0.500 atm, a volume of 25.0 liters, and a temperature of 300. K, how many moles of gas do I have?