

## Combined Gas Law Worksheet

- 1) If I initially have 4.0 L of a gas at a pressure of 1.0 atm, what will the volume be if I increase the pressure to 2.0 atm?
- 2) A gas balloon has an internal pressure of 1.00 atm and a volume of 0.10 L. If the temperature where the balloon is released is  $20^{\circ}\text{C}$ , what will happen to the volume when the balloon rises to an altitude where the pressure is 0.40 atm and the temperature is  $-20^{\circ}\text{C}$ ?
- 3) A small research submarine with a volume of 1.0 m<sup>3</sup> L has an internal pressure of 1.0 atm and an internal temperature of  $20^{\circ}\text{C}$ . If the submarine descends to a depth where the pressure is 100 atm and the temperature is  $0^{\circ}\text{C}$ , what will the volume of the gas inside be if the hull of the submarine breaks?
- 4) People who are angry sometimes say that they feel as if they're on fire. If a calm person with a lung capacity of 2.5 liters and a body temperature of  $30^{\circ}\text{C}$  gets angry, what will the volume of the person's lungs be if their temperature rises to  $39^{\circ}\text{C}$ . Based on this, do you think it's likely they will explode?