1. You have a gas at 25°C confined to a cylinder with a movable piston, which of the following actions would double the gas pressure?
   1. Lifting up the piston to double the volume while keeping the temperature constant.
   2. Heating the gas so that its temperature rises from 25°C to 50°C, while keeping the volume constant.
   3. Pushing down on the piston to halve the volume while keeping the temperature constant.
2. A soda bottle is flexible enough that the volume of the bottle can change even without opening it. If you have an empty soda bottle (volume of 2 L) at room temperature (25 0C), what will the new volume be if you put it in your freezer (-4 0C)?
3. Divers get “the bends” if they come up too fast because gas in their blood expands, forming bubbles in their blood. If a diver has 0.05 L of gas in his blood under a pressure of 250 atm, then rises instantaneously to a depth where his blood has a pressure of 50.0 atm, what will the volume of gas in his blood be?
4. A fixed quantity of gas at 21°C exhibits a pressure of 752 torr and occupies a volume of 5.12L.
   1. Calculate the volume the gas will occupy if the pressure is increased to 1.88atm while the temperature is held constant.
   2. Calculate the volume the gas will occupy if the temperature is increased to 175°C while the pressure is held constant.