**Special Gas Law Problems For My Very Favorite Class**

Handy information: R = 0.08206 L atm/mol K; K = oC + 273

1. If I have 18 L of a gas at a pressure of 45 atm, what will the pressure of the gas be if I compress it to a volume of 2.5 L?
2. If I place 7.5 moles of oxygen into a 5.0 L container at a temperature of 25o C, what will the pressure inside the container be?
3. I’ve got a balloon that has a volume of 150 L at a temperature of 25o C. If the balloon rises to an altitude where the temperature is 15o C, what will the new volume of the balloon be?
4. How many moles of carbon dioxide will be needed to fill a 550 L bag at a pressure of 1.15 atm and a temperature of 25o C?
5. My cat is in a container with a volume of 50 L and at a temperature of 35o C. If the temperature of the container is lowered to -35o C, how big will the container be?
6. I have 40 liters of nitrogen gas in a balloon at a temperature of 25 degrees Celsius. To what temperature would I have to heat this gas for it to have a volume of 65 liters?

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1. If I have 18 L of a gas at a pressure of 45 atm, what will the pressure of the gas be if I compress it to a volume of 2.5 L?

324 atm. Use the combined gas law

1. If I place 7.5 moles of oxygen into a 5.0 L container at a temperature of 25o C, what will the pressure inside the container be?

36.7 atm. Use PV = nRT

1. I’ve got a balloon that has a volume of 150 L at a temperature of 25o C. If the balloon rises to an altitude where the temperature is 15o C, what will the new volume of the balloon be?

145 L. Use combined gas law.

1. How many moles of carbon dioxide will be needed to fill a 550 L bag at a pressure of 1.15 atm and a temperature of 25o C?

25.9 mols. Use ideal gas law.

1. My cat is in a container with a volume of 50 L and at a temperature of 35o C. If the temperature of the container is lowered to -35o C, how big will the container be?

38.6 L. Combined gas law.

1. I have 40 liters of nitrogen gas in a balloon at a temperature of 25 degrees Celsius. To what temperature would I have to heat this gas for it to have a volume of 65 liters?

484 K. Combined gas law.