Charles’ Law

V1 V2

T1 = T2

Solve the following problems assuming a constant pressure.

1. A sample of oxygen occupies a volume of 350 mL at 35 oC. What volume will it occupy at 85 oC?
2. Chlorine gas is at a temperature of 50 oC when it occupies a volume of 3.2 L. At what temperature will the volume be 5.8 L?
3. Neon gas was heated from 50 oC to 150 oC. Its new volume is 175 mL. What was the original volume?
4. Helium has a volume of 36 mL at 400 K. What volume will it have at 600 K?
5. A sample of fluoring at 45 OC and a volume of 1.8 liters is cooled to 20 0C. What is the new volume?
6. Nitrogen gas at 300 K occupies a volume of 500 mL. To what temperature should it be heated to lower the volume to 250 mL?
7. Argon gas occupies a volume of 5.4 L at -45 oC. What volume will it occupy at 45 oC?
8. A sample of helium is cooled and its volume changed from 280 mL to 125 mL. If the final temperature was -55 oC, what was its original temperature?