

Exercise 1.47 – Boyle's law

Q1407-01 Calculate the final volume of 25cm^3 gas when its pressure is reduced from 101 kPa to 75 kPa

Q1407-02 A gas occupies 1.2 litres at a pressure of 50.5 kPa. What is the volume when the pressure is increased to 101 kPa?

Q1407-03 Calculate the pressure required to reduce 22.4 dm^3 of gas at STP to a volume of 10 dm^3 at constant temperature.

Q1407-04 If a gas occupies 3.60 dm^3 at a pressure of 1.00 atm, what will be its volume when the pressure is increased to 6.0 atm (temperature is constant)?

Q1407-05 To what pressure must a gas be compressed in order to get into a 3.00 m^3 container all of the gas that occupies 600 m^3 at STP?

Q1407-06 A gas occupies 1.50 litres at 1.00 atm. What will be the volume of this gas if the pressure is increased to 3.00 atm?

Q1407-07 A gas occupies 22.4 litres at 101 kPa. What would the pressure be if the volume were 44.8 litres?

Q1407-08 500 cm^3 of a gas is collected at an atmospheric pressure of 99.0 kPa pressure. What will the volume be at standard pressure (assume the temperature does not change)?

Q1407-09 A 500 cm^3 flask is filled with chlorine at an atmospheric pressure of 100 kPa. What size container (litres) would be required to hold this gas at a pressure of 10 kPa?

Q1407-10 A $10,000\text{ m}^3$ industrial supply of nitrogen at an atmospheric pressure of 100 kPa is compressed into a gas cylinder with a volume of 200 dm^3 . Calculate the pressure required if the temperature remains constant?
