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Physics 12 AP Kinetic Theory and the Gas Laws

Read 13-7

1] What is Boyle's Law?

2] What is Charles Law?

3] What is Gay-Lussac's Law?

Read 13-7

4] List the ideal gas law . (2 forms) What is the value of R?

Study the examples on P 396

5] If 5.00 m^3 of a gas initially at STP is placed under a pressure of 4.0 atm, the temperature of the gas rises to 25 deg C. What is the volume? (1.36 m^3)

6] The pressure in a helium gas cylinder is initially 30 atm. After many balloons have been blown up, the pressure has decreased to 6 atm. What fraction of the original gas remains in the cylinder? (0.2)

7] Calculate the density of oxygen at STP using the ideal gas laws. ($1.43\ kg/m^3$)

8] A tank contains 28.0 kg of O_2 gas at guage pressure of 6.80 atm. If the oxygen is replaced with He, how many kg of the later will be needed to produce a guage pressure of 8.25 atm? (4.24 kg)

9] How many moles of water are there in 1.000 L? How many molecules? (55.6 moles, 3.34×10^{25} molecules)

Read 13-11 Very Carefully

10] What does the term kinetic theory mean?