

11] What are the four postulates of kinetic theory?

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12] How does kinetic theory explain Boyle's Law??

13] List the equation that relates temperature to the average kinetic energy of gas molecules.

Carefully study the examples on P 401

14] a) What is the average kinetic energy of an oxygen molecule at STP?

b) What is the total translational kinetic energy of 1 mole of O<sub>2</sub> molecules at 20 deg C? (5.65 x 10<sup>-21</sup> J, 3650 J)

15] Calculate the rms speed of helium atoms near the surface of the sun at a temperature of about 6000 deg K. (6120 m/s)

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16] A gas is at 20 deg C. To what temperature must it be raised to double the rms speed of its molecules? (899 deg C)

17] What is the rms speed of nitrogen molecules contained in an 8.0 m<sup>3</sup> volume at 2.1 atm if the total amount of nitrogen is 1300 mol? (375 m/s)