

3. We use the ideal gas law in the form of Eq. 20-9:

$$p = nkT = (8.43 \times 10^{28} \text{ m}^{-3})(1.38 \times 10^{-23} \text{ J/K})(300 \text{ K}) = 3.49 \times 10^8 \text{ Pa} = 3490 \text{ atm} .$$