Nitrogen at room temp, $T = 20°C = 293K$

Find pressure for $\lambda = 1m$.

$$\lambda = \frac{1}{4\sqrt{2}\,\pi\left(\frac{N}{V}\right)r^2}$$

So:

$$\left(\frac{N}{V}\right) = \frac{1}{4\sqrt{2}\,\pi r^2 \lambda}$$

Now, IGL: $PV = N k_B T$

So: $$P = \left(\frac{N}{V}\right) k_B T = \frac{k_B T}{4\sqrt{2}\,\pi r^2 \lambda}$$

where $r = 1 \times 10^{-10} m$ for N_2

So, $P = \underline{0.0228\ Pa}$

$= \underline{2.246 \times 10^{-7}\ atm.}$