$$\rho_{gas} = 0.6\ kg/m^3 \Rightarrow V_{gas} = \frac{m}{\rho_{gas}} = \frac{1\ kg}{0.6\ kg/m^3}$$

$$V_{gas} = \frac{10}{6}\ m^3$$

$$\frac{V_{molecule}}{V_{gas}} = \frac{10^{-3}}{\frac{10}{6}} = 6 \times 10^{-4}$$ ✓

$$V_{gas} = \frac{1}{6 \times 10^{-4}} V_{molecule}$$

$$V_{gas} = \frac{10000}{6} V_{molecule}$$

$$V_{gas} = \frac{5000}{3} V_{molecule} \Rightarrow V_{gas} >>> V_{molecules}$$

Example 2: Estimate the volume of a water molecule using the data in Example 1.