Estimate the ratio of frequencies in helium and air of sound from an instrument of fixed size:

Since wavelength is fixed ratio of frequencies is ratio of sound speeds

$$\frac{\nu_{He}}{\nu_{Air}} = \frac{c_{He}}{c_{Air}}$$

I know c_{Air}; to work out c_{He} I use

$$c = \sqrt{\frac{\gamma p}{\rho}}$$

assuming atmospheric pressure would seem sensible, since helium is monatomic $\gamma_{He} \simeq 5/3$, but still need density. Assuming ideal gas law holds

$$\rho = mn$$
$$= \frac{mp}{kT}$$

where n is number density and T is temperature. The mass of helium is $m_{He} \simeq 4m_u$.

$$c_{He} = \sqrt{\frac{\gamma_{He} kT}{m_{He}}}$$

Thus, inserting values

$$\frac{\nu_{He}}{\nu_{Air}} = \frac{1}{c_{Air}}\sqrt{\frac{\gamma_{He} kT}{m_{He}}}$$
$$= \frac{1}{330}\sqrt{\frac{5/3\,(1.38\times10^{-23})(300)}{4(1.67\times10^{-27})}}$$
$$\simeq \frac{1}{330}\sqrt{\frac{5/3 \times 4/3 \times 3 \times 10^{-21}}{4 \times 5/3 \times 10^{-27}}}$$

$$\approx \frac{1}{330}\sqrt{10^6}$$

$$\approx \frac{1000}{330}$$

$$\approx 3$$

[Exact: $v_{He}/v_{Air} = 2.89$ assuming $T = 20°C$ and relative humidity of air 82.3%]