

A sound wave in air has a frequency of 425 Hz.

1) $\lambda = ?$

2) If frequency increases, what happens to λ ?

3) If $f = 425 \text{ Hz}$ 475 Hz $\lambda = ?$

1) $v = f \lambda$

$$\lambda = \frac{v}{f} = \frac{343 \text{ m/s}}{425 \text{ Hz}} = 8.07 \text{ E-1 m}$$

$$\boxed{0.807 \text{ m}}$$

2) $\lambda = \frac{v}{f}$ $\uparrow f$ $\boxed{\downarrow \lambda}$

3) $\lambda = \frac{v}{f} = \frac{343 \text{ m/s}}{475 \text{ Hz}} = 7.22 \text{ E-1 m}$

$$\boxed{0.722 \text{ m}}$$