

8. At  $f = 20 \text{ Hz}$ ,

$$\lambda = \frac{v}{f} = \frac{343 \text{ m/s}}{20 \text{ Hz}} = 17 \text{ m} ,$$

and at  $f = 20 \text{ kHz}$ ,

$$\lambda = \frac{v}{f} = \frac{343 \text{ m/s}}{20 \times 10^3 \text{ Hz}} = 1.7 \times 10^{-2} \text{ m} .$$