

92. (a) Consider a string of pulses returning to the stage. A pulse which came back just before the previous one has traveled an extra distance of $2w$, taking an extra amount of time $\Delta t = 2w/v$. The frequency of the pulse is therefore

$$f = \frac{1}{\Delta t} = \frac{v}{2w} = \frac{343 \text{ m/s}}{2(0.75 \text{ m})} = 2.3 \times 10^2 \text{ Hz} .$$

- (b) Since $f \propto 1/w$, the frequency would be higher if w were smaller.