

4. Since the wave is traveling in the $-x$ direction, the argument of the trig function is $kx + \omega t$ instead of $kx - \omega t$ (as in Eq. 17-2).

$$\begin{aligned}y(x, t) &= y_{\text{m}} \sin(kx + \omega t) = y_{\text{m}} \sin\left[2\pi f \left(\frac{x}{v} + t\right)\right] \\&= (0.010 \text{ m}) \sin\left[2\pi(550 \text{ Hz})\left(\frac{x}{330 \text{ m/s}} + t\right)\right] \\&= 0.010 \text{ m} \sin[\pi(3.33x + 1100t)]\end{aligned}$$

where x is in meters and t is in seconds.