63. (a) At $x = 2.3\,\text{m}$ and $t = 0.16\,\text{s}$ the displacement is

$$y(x,t) = 0.15\sin[(0.79)(2.3) - 13(0.16)]\,\text{m} = -0.039\,\text{m}\,.$$

(b) The wave we are looking for must be traveling in $-x$ direction with the same speed and frequency. Thus, its general form is $y'(x,t) = y_m \sin(0.79x + 13t + \phi)$, where y_m is its amplitude and ϕ is its initial phase. In particular, if $y_m = 0.15\,\text{m}$, then there would be nodes (where the wave amplitude is zero) in the string as a result.

(c) In the special case when $y_m = 0.15\,\text{m}$ and $\phi = 0$, the displacement of the standing wave at $x = 2.3\,\text{m}$ and $t = 0.16\,\text{s}$ is

$$y(x,t) = -0.039\,\text{m} + (0.15\,\text{m})\sin[(0.79)(2.3) + 13(0.16)] = -0.14\ \text{m}\ .$$