

27. The displacement of the string is given by $y = y_m \sin(kx - \omega t) + y_m \sin(kx - \omega t + \phi) = 2y_m \cos(\frac{1}{2}\phi) \sin(kx - \omega t + \frac{1}{2}\phi)$, where $\phi = \pi/2$. The amplitude is $A = 2y_m \cos(\frac{1}{2}\phi) = 2y_m \cos(\pi/4) = 1.41y_m$.