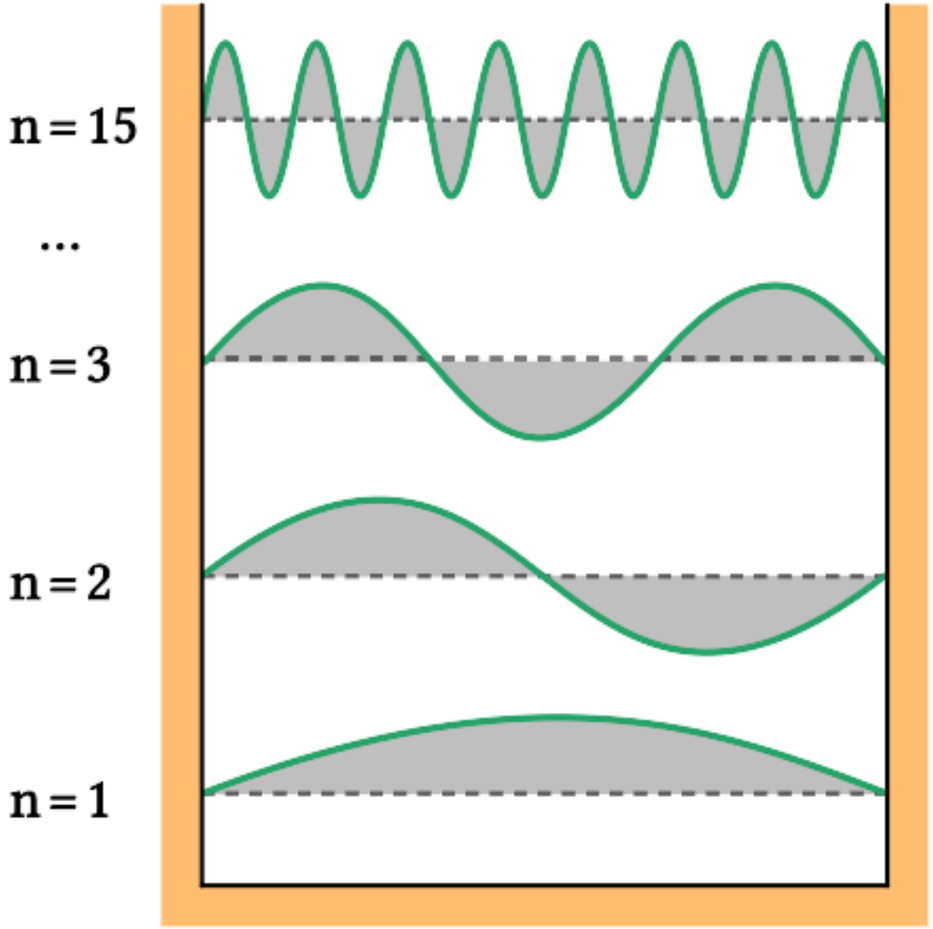
Particle In Box: Wave Functions



The energies are related to the wavelength:

$$\epsilon_n = \frac{p_n^2}{2m} \qquad p_n = \frac{\hbar\pi}{L}n = \frac{h}{\lambda_n}$$

The wave functions are a sinusoidal:

$$\psi_n(x) = \sqrt{\frac{2}{L}}\sin\left(\frac{p_n x}{\hbar}\right)$$

Mean energy of Particle In Box: