

b #8.

$$\vec{p} = \hbar \vec{k} \text{ and } E = \hbar \omega$$

$$E = (p^2 c^2 + m^2 c^4)^{1/2}$$

$$p^2 = \hbar^2 \vec{k}^2 = \hbar^2 (k_1^2 + k_2^2 + k_3^2)$$

$$= \frac{\pi^2 \hbar^2}{L^2} (n_1^2 + n_2^2 + n_3^2)$$

$$E = \left( \frac{\pi^2 \hbar^2 c^2}{L^2} (n_1^2 + n_2^2 + n_3^2) + m^2 c^4 \right)^{1/2}$$

$$E_{111} = \dots$$