

2.3. Counting States

2.3a. In a 1D box of length L with periodic boundary conditions, the allowed values of the momentum p are spaced by

(a) $\frac{h}{L}$

(b) $\frac{2p}{L}$

(c) $\frac{h}{L^2}$

(d) $\frac{h}{2L}$

(e) None of the above

2.3b. The number of states $N(p)$ with momentum less than p in a conductor is given by (d : number of dimensions)

(a) $N(p) \sim p$

(b) $N(p) \sim p^d$

(c) $N(p) \sim p^2$

(d) $N(p) \sim p^{d/2}$

(e) None of the above