

30. We solve Eq. 20-25 for  $d$ :

$$d = \sqrt{\frac{1}{\lambda \pi \sqrt{2} (N/V)}} = \sqrt{\frac{1}{(0.80 \times 10^5 \text{ cm}) \pi \sqrt{2} (2.7 \times 10^{19} / \text{cm}^3)}}$$

which yields  $d = 3.2 \times 10^{-8} \text{ cm}$ , or 0.32 nm.