Unit Cells
Metallic Crystal Structures

3.2 For this problem, we are asked to calculate the volume of a unit cell of lead. Lead has an FCC crystal structure (Table 3.1). The FCC unit cell volume may be computed from Equation 3.4 as

$$V_C = 16R^3\sqrt{2} = (16)\left(0.175 \times 10^{-9}\ \text{m}\right)^3\left(\sqrt{2}\right) = 1.213 \times 10^{-28}\ \text{m}^3$$