$$= \frac{100}{\dfrac{C_{\text{InAs}}}{5.668\ \text{g/cm}^3} + \dfrac{(100 - C_{\text{InAs}})}{5.316\ \text{g/cm}^3}}$$

Within the zinc blende unit cell there are four formula units, and thus, the value of n' in Equation 12.1 is 4; hence, this expression may be written in terms of the concentration of InAs in weight percent as follows:

$$V_C = 1.971 \times 10^{-22}\ \text{cm}^3$$

$$= \frac{n' A_{\text{ave}}}{\rho_{\text{ave}} N_{\text{A}}}$$

$$= \frac{(4\ \text{fu/unit cell})\left[\dfrac{100}{\dfrac{C_{\text{InAs}}}{189.74\ \text{g/mol}} + \dfrac{(100 - C_{\text{InAs}})}{144.64\ \text{g/mol}}}\right]}{\left[\dfrac{100}{\dfrac{C_{\text{InAs}}}{5.668\ \text{g/cm}^3} + \dfrac{(100 - C_{\text{InAs}})}{5.316\ \text{g/cm}^3}}\right](6.023 \times 10^{23}\ \text{fu/mol})}$$

And solving this expression for C_{InAs} leads to $C_{\text{InAs}} = 46.1$ wt%.