1 Relate Ω_j and ω_j in terms of h

$$\frac{\rho_i + \rho_k + \rho_\Lambda}{\rho_c} = \frac{\rho_i + \rho k + \rho\Lambda}{\frac{3H^2}{8\pi G}} = \Omega_i + \Omega_k + \Omega_\Lambda$$

$$\frac{\rho_i + \rho_k + \rho_\Lambda}{\frac{3(100h)^2}{8\pi G}} = \Omega_i + \Omega_k + \Omega_\Lambda$$

$$(\omega_i + \omega_k + \omega_\Lambda)/h^2 = \Omega_i + \Omega_k + \Omega_\Lambda$$

$$\omega_i + \omega_k + \omega_\Lambda = h^2(\Omega_i + \Omega_k + \Omega_\Lambda)$$

2 Write the Friedmann Equation in terms of ω_j and h

From the Friedmann equation we have

$$\frac{8\pi G}{3}(\rho_i + \rho_k + \rho_\Lambda) = H^2$$

$$\rho_i + \rho_k + \rho_\Lambda = \frac{3H^2}{8\pi G}$$

Dividing both sides of the second expression by ρ_c^{100} gives us

$$\omega_i + \omega_k + \omega_\Lambda = \rho_c/\rho_c^{100} = h^2$$

3 Find the value of ρ_c^{100} in energy units

From the back of K&T The critical density is quoted as $8.0992h^2 \times 10^{-47}\text{GeV}^4$. To get ρ_c^{100} we let h go to 1 here, to get $\rho_c^{100} = 8.0992 \times 10^{-47}\text{GeV}^4$