7. Skoog 7-19

(a) $D^{-1} = \frac{d}{nF} = \left(\frac{\text{mm}}{2000}\right)\left(\frac{10^6 \text{ nm}}{\text{m}}\right)\left(\frac{1}{0.65 \text{ m}}\right)\left(\frac{\text{m}}{10^3 \text{ mm}}\right) = \boxed{0.77 \text{ nm/mm}}$

(b) $R = \frac{\lambda}{\Delta\lambda} = nN = (1)(3.0 \text{ cm})\left(\frac{2000}{\text{m}}\right)\left(\frac{10 \text{ mm}}{\text{cm}}\right) = \boxed{6.0 \times 10^4}$

(c) $\Delta\lambda = \frac{\lambda}{R} = \frac{560 \text{ nm}}{6.0 \times 10^4} = \boxed{0.009 \text{ nm}}$