HW8 Solution

9.35 $\lambda = \frac{2\mathrm{d}}{92} = 550\mathrm{nm}.$

9.40 (a) $\mathrm{F} = \frac{4R}{(1-R)^2} = 80$

(b) $\gamma = \frac{4}{\sqrt{F}} = 0.447$

(c) $\mathcal{F} = \frac{\pi\sqrt{F}}{2} = 14.05$

(d) $\mathrm{C} = 1 + \mathrm{F} = 81$

9.41 $\frac{2}{1+F\left(\frac{\Delta\delta}{4}\right)^2} = 0.81\left[1 + \frac{1}{1+F\left(\frac{\Delta\delta}{2}\right)^2}\right]$

$F^2(\Delta\delta)^4 - 15.54F(\Delta\delta)^2 - 30 = 0$

Solve this equation for $\Delta\delta$, then Eq. (9.73) follows.

9.43 The prove is trivial (make use of reflection and transmission coefficients in chapter 4).

9.45 $n_1 = \sqrt{n_s} = 1.24, d = \frac{\lambda_f}{4n_1} = 108.9nm.$

9.47 $\mathrm{d} = \frac{\lambda_0}{4n_f} = 96nm.$