

81. We adapt the result of problem 21. Now, the phase difference in radians is

$$\frac{2\pi t}{\lambda} (n_2 - n_1) = 2m\pi .$$

The problem implies $m = 5$, so the thickness is

$$t = \frac{m\lambda}{n_2 - n_1} = \frac{5(480 \text{ nm})}{1.7 - 1.4} = 8.0 \times 10^3 \text{ nm} = 8.0 \mu\text{m} .$$