

70. We apply Eq. 34-42 (twice) to obtain

$$I = I_0 \cos^2 \theta_1 \cos^2 \theta_2$$

where $\theta_1 = 20^\circ$ and $\theta_2 = (20^\circ + \theta)$. Since $I/I_0 = 0.200$, we find $\cos \theta_2 = \sqrt{0.2265}$ which leads to $\theta_2 = 62^\circ$ and consequently to $\theta = 42^\circ$.