

$$n_1 = 1.00$$

$$n_2 = 1.33$$

$$\lambda_1 = 589 \text{ nm} = 589 \times 10^{-9} \text{ m}$$

$$\theta_1 = 35.0^\circ$$

Find  $\theta_2$ :

$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$
$$(1.00) \sin 35^\circ = (1.33) \sin \theta_2$$

$$\theta_2 = 25.5^\circ$$

Find  $v_2$ :

$$n_2 = \frac{c}{v_2} \quad (1.33) = \frac{(3 \times 10^8 \text{ m/s})}{v_2}$$

$$v_2 = 2.26 \times 10^8 \text{ m/s}$$

Find  $\lambda_2$ :

$$\frac{v_1}{\lambda_1} = \frac{v_2}{\lambda_2} \quad (f \text{ is constant})$$

$$\frac{(3 \times 10^8 \text{ m/s})}{(589 \times 10^{-9} \text{ m})} = \frac{(2.26 \times 10^8 \text{ m/s})}{\lambda_2}$$

$$\lambda_2 = 443 \text{ nm}$$