MP/399

air → unk liquid

$\theta_i = 65.0°$

$\theta_R = 42.0°$

$n_R = ??$

$n_i = 1.00$

Snell's Law:

$$n_i \sin\theta_i = n_R \sin\theta_R$$

$$(1.00)\sin 65.0° = n_R \sin 42.0°$$

$$\boxed{n_R \doteq 1.35}$$

MP/404

air → ruby

$\theta_i = 45°$

$n_i = 1.00$

$\theta_R = ?$

$n_R = 1.54$

air → ruby

$$n_i \sin\theta_i = n_R \sin\theta_R$$

$$(1.00)\sin 45° = (1.54)\sin\theta_R$$

$$\sin\theta_R = \frac{(1.00)\sin 45°}{1.54}$$

$$\boxed{\theta_R \doteq 27°}$$

PP/400, 405

MP + PP/409-410