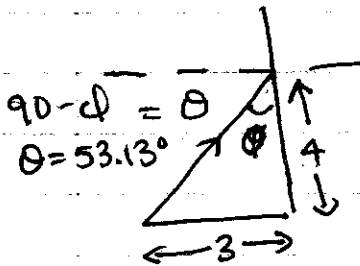
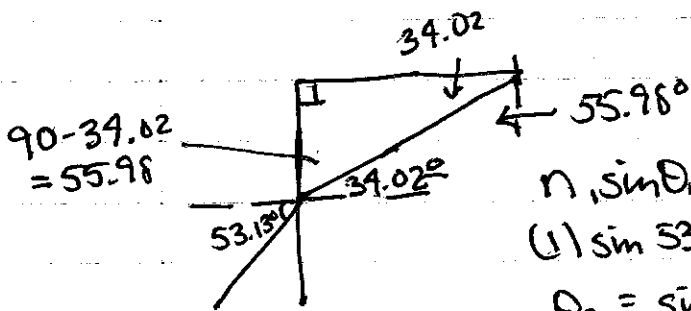


$$\textcircled{3} \quad v = \frac{c}{n} = \frac{3 \times 10^8}{1.43} = \underline{2.10 \times 10^8 \text{ m/s}} \textcircled{a}$$



$$\theta = \tan^{-1}\left(\frac{3}{4}\right) = 36.87^\circ$$

$$\theta_{\text{inc}} = \underline{53.13^\circ} \textcircled{b}$$



$$n_1 \sin \theta_1 = n_2 \sin \theta_2$$

$$(1) \sin 53.13^\circ = 1.43 \sin \theta_2$$

$$\theta_2 = \sin^{-1}\left(\frac{\sin 53.13^\circ}{1.43}\right)$$

$$\theta_2 = 34.02^\circ$$

angle of incidence at B is 55.98°

Approach I.

$$\theta_c = \sin^{-1}\left(\frac{1}{1.43}\right)$$

$$\theta_c = 44.37^\circ$$

$\theta_{\text{inc}} > \theta_{\text{crit}}$
all reflection

Approach II

$$1.43 \sin 55.98^\circ = 1 \sin \theta_{\text{ref}}$$

$$1.18 = \sin \theta_{\text{ref}}$$

no solution

all reflection since
no refraction solution