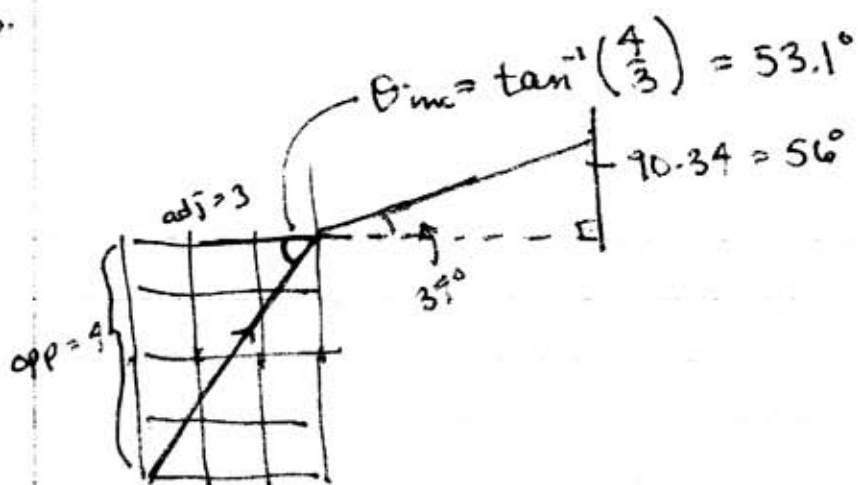


3.



$$a. v = \frac{c}{n} = \frac{3 \times 10^8}{1.43} = \underline{\underline{2.098 \times 10^8 \text{ m/s}}}$$

$$b. \theta_{inc} = \tan^{-1}\left(\frac{4}{3}\right) = 53.1^\circ \text{ see above picture}$$

$$c. \theta_{ref} \rightarrow n_1 \sin \theta_1 = n_2 \sin \theta_2$$

$$(1) \sin(53.1^\circ) = (1.43) \sin \theta_2$$

$$\theta_2 = 34^\circ$$

the incident angle at B is 56° see above picture

$$d. \theta_c = \sin^{-1}\left(\frac{1}{n}\right) = 44.4^\circ \leftarrow \text{critical angle}$$

$$n = 1.43$$

Not transmission at B because incident angle is larger than critical angle (all reflection)