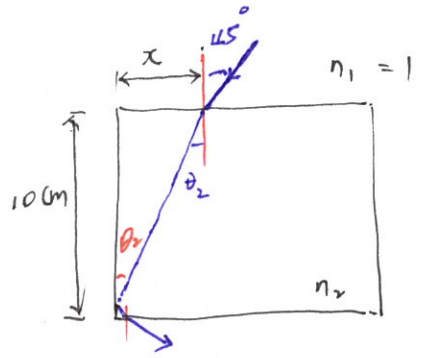
Quiz #1 Sol. 3/10



Find out maximum x to reach the lower left corner of the cube.

$n_2 = 1.4$

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

$$\theta_2 = \sin^{-1}\left(\frac{n_1}{n_2}\sin\theta_1\right) = \sin^{-1}\left(\frac{1}{1.4}\sin 45\right) = \underline{30.3^\circ}$$

$$\tan\theta_2 = \frac{x}{10} \rightarrow x = 10\tan 30.3 = \underline{5.85\,(\text{cm})}.$$