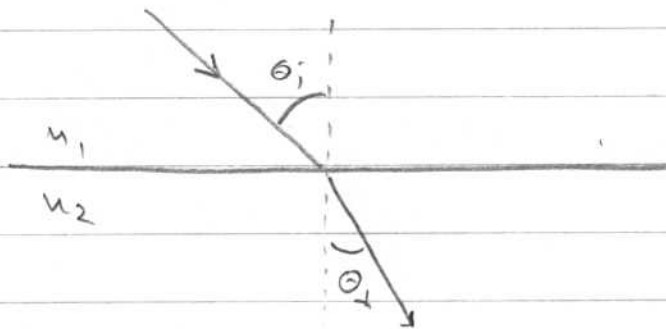


4.9



$$\begin{cases} 1: \text{luft} \Rightarrow n_1 \approx 1 \\ 2: \text{glas} \Rightarrow n_2 = 1.52 \\ \theta_i = 30^\circ \end{cases}$$

$$\text{Snell: } n_1 \sin \theta_i = n_2 \sin \theta_t$$

$$\Rightarrow \theta_t \approx 19^\circ$$