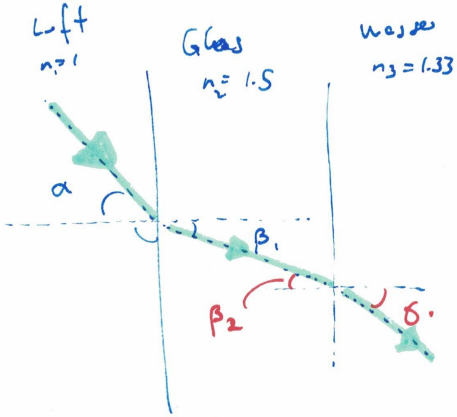
Aufgabe 1

(6) Luft → ~~Wasser~~ Glas → Wasser



$\frac{\sin \alpha}{\sin \beta_1} = \frac{1.5}{1} = 1.5$ ($\alpha = 60°$, $1.5 \to n_2$, $1 \to n_1$)

($\sin\alpha \cdot n_1 = \sin\beta_1 \cdot n_2$)

($\sin\beta_1 = \frac{n_1}{n_2} \cdot \sin\alpha$)

$\to \beta_1 = 35.26° = \beta_2$

$\frac{\sin\beta_2}{\sin\gamma_1} = \frac{1.33}{1.5}$ ($1.33 \to n_3$, $1.5 \to n_2$) ; $\sin\gamma_1 = \frac{1.5 \sin\beta_2}{1.33}$ ($1.5 \to n_2$, $1.33 \to n_3$)

$\to \gamma_1 = 40.63°$

allgemein: "Glasbrechung hebt sich auf" ($\beta_2 = \beta_1$)

$\sin\gamma_1 = \frac{n_2}{n_3} \cdot \sin\beta_2$; $\sin\beta_1 = \frac{n_1}{n_2} \cdot \sin\alpha$

$= \frac{n_2}{n_3} \cdot \frac{n_1}{n_2} \cdot \sin\alpha = \frac{n_1}{n_3} \cdot \sin\alpha$ ($= \frac{1}{1.33} \cdot \sin 60°$ → $\gamma = 40.63°$)

↑ wechselnd von Glas asp. n_2 !