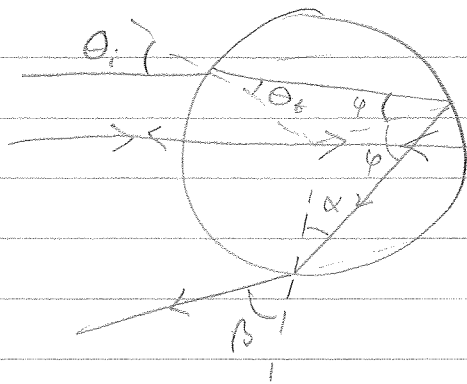
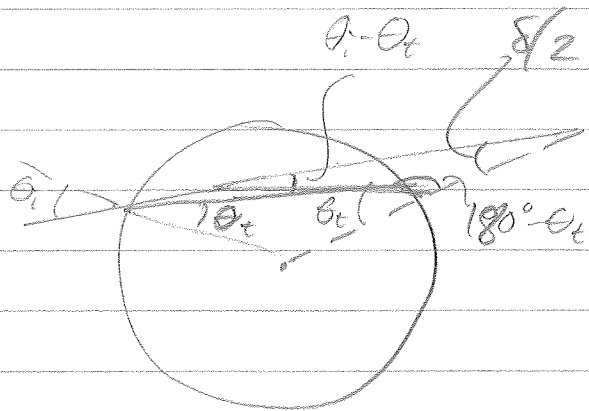


pbs
3-5



δ

Geometri: $\varphi = \theta_t = \alpha$
 $\Rightarrow \beta = \theta_i$



$$\frac{\delta}{2} = 180^\circ - (180^\circ - \theta_t) - (\theta_i - \theta_t) =$$
$$= 2\theta_t - \theta_i \Rightarrow \delta = 4\theta_t - 2\theta_i$$

Snell: $\theta_t = \arcsin\left(\frac{n_i}{n_t} \sin \theta_i\right)$
 $= \arcsin\left(\frac{1}{n_{\text{vatten}}} \sin \theta_i\right)$ $n_{\text{vatten}} = 1.33$

a) $\theta_i = 10^\circ : \theta_t = 7.5^\circ \Rightarrow \delta = 10.0^\circ$

b) $\theta_i = 20^\circ : \theta_t = 14.9^\circ \Rightarrow \delta = 19.6^\circ$

c) $\theta_i = 30^\circ \Rightarrow \theta_t = 22.1^\circ \Rightarrow \delta = 28.3^\circ$

d) $\theta_i = 40^\circ \Rightarrow \theta_t = 28.9^\circ \Rightarrow \delta = 35.6^\circ$