5.51.

β (L) = 30° kut loma

n (stakla) = 1,50

α (u = upadni kut) = ?

$n = \frac{\sin\alpha}{\sin\beta}$

$\sin\alpha = n \sin\beta = 1,50 \cdot \sin 30° = 1,50 \cdot 0,5 =$

$\sin\alpha = 0,75$

$\alpha = \sin^{-1} 0,75 = 48,59° = 48° 35'$

5.52.

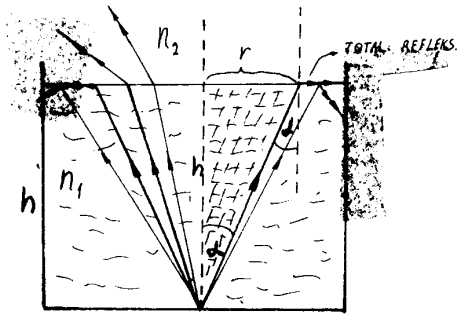
h (dubina ugljičnog bisulfida) = 10cm

n_1 (ugljični bisulfid) = 1,63

n_2 (zrak) = 1

P (slobodna površina) = ?

S (put zrake svjetlosti) = ?



r = polumjer kružnice

$\alpha = \sin^{-1} \frac{n_2}{n_1} = \sin^{-1} \frac{1}{1,63} = \sin^{-1} 0,6135 = 37,84° = 37° 50'$

$tg\alpha = \frac{r}{h}$ $\quad r = h \cdot tg\alpha = 10\,cm\ tg\ 37,84° = 10cm \cdot 0,7768 = 7,768cm$

površina kruga $P = r^2 \cdot \pi = 7,768^2 \cdot 3,14 = 60,342 \cdot 3,14 = 189,47cm^2$

put zrake s:

$\sin\alpha = \frac{r}{s}$ $\quad s = \frac{r}{\sin\alpha} = \frac{7,768\,cm}{\sin 37,84°} = \frac{7,768\,cm}{0,6135} = 12,66cm$

5.53.

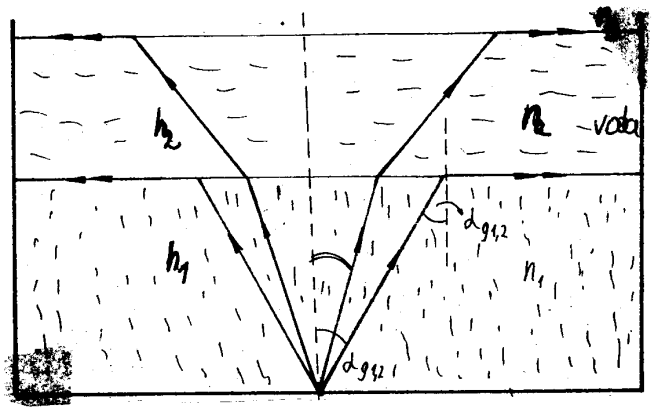
h (dubina ugljičnog bisulfida) = 10cm

h_1 (visina vode) = 7cm

n_1 (ugljični bisulf.) = 1,63

n_2 (voda) = 1,33

α_g = ?



SVJETLOST ĆE SE PROŠIRITI KADA IDE IZ ugljičnog bisulfida u vodu.

$tg = \sin^{-1} \frac{n_2}{n_1} = \sin^{-1} \frac{1,33}{1,63} = \sin^{-1} 0,81595 = 54,68° = 54° 41'$