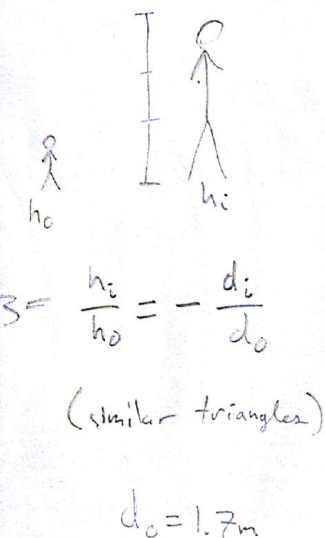
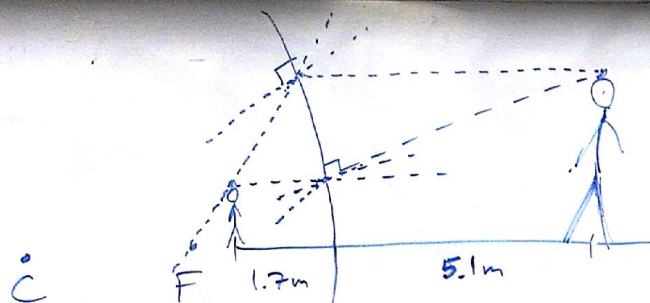


h. 32. Prob 14



$d_o = 1.7m$



$$\Rightarrow d_i = -\frac{1}{3} d_o \Rightarrow d_i < 0 \Rightarrow \frac{1}{f} = \frac{1}{d_o} + \frac{1}{d_i} = \frac{1}{d_o} - \frac{1}{3d_o} = +\frac{2}{3d_o} \Rightarrow \frac{1}{2} = f = +\frac{3d_o}{2} \Rightarrow r = +3d_o = +5.1m$$

$d_o > 0$ always

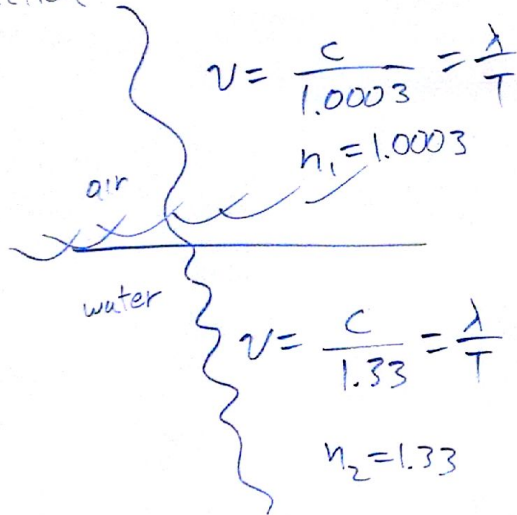
$d_i = -3d_o = -5.1m$

More problems
3, 7, 15, 17, 25,

Refraction:
Problems: 37, 43, 45, 61, 63

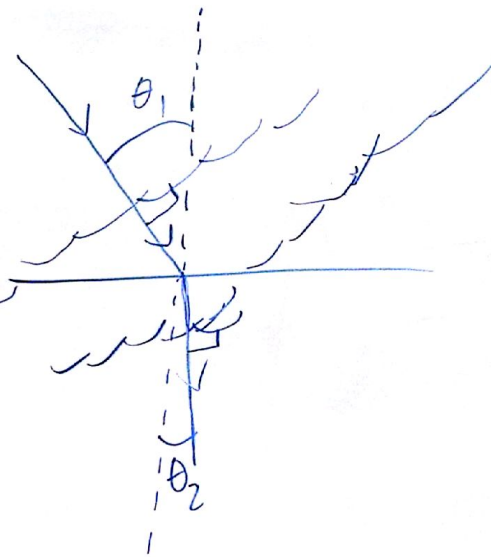
Question 3: 17, 20

Refraction



T period same

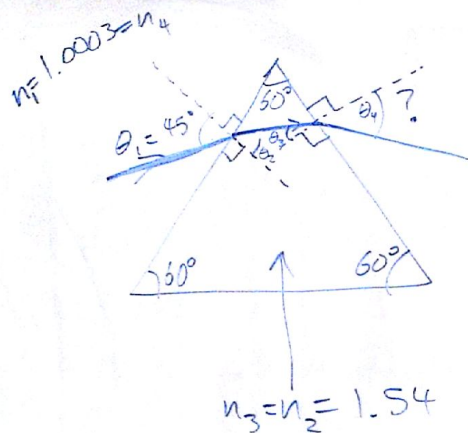
$$f = \frac{1}{T} \text{ (Frequency)}$$



Snell's Law:

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

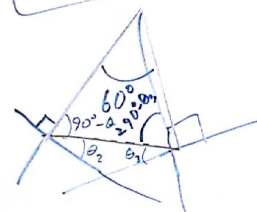
Ch. 32. Prob 48



$$\frac{1}{\sqrt{2}} = 1.54 \sin \theta_2 \rightarrow \theta_2 = \sin^{-1}\left(\frac{1}{1.54\sqrt{2}}\right) \rightarrow \theta_3 = 60^\circ - \sin^{-1}\left(\frac{1}{1.54\sqrt{2}}\right) = 32.7^\circ$$

27.3°

$$1.54 \sin 32.7^\circ = 1.0003 \sin \theta_4$$



$$180^\circ = 90^\circ - \theta_2 + 90^\circ - \theta_3 + 60^\circ$$

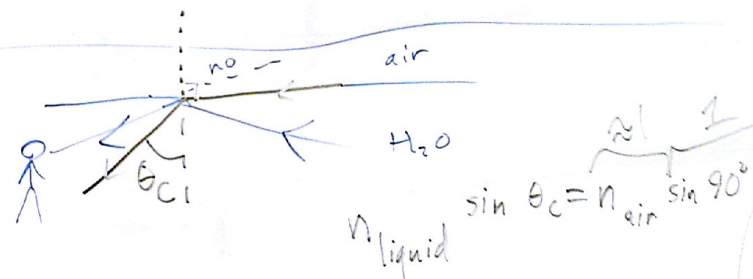
$$\theta_2 + \theta_3 = 60^\circ$$

$$\theta_4 = \sin^{-1}(1.54 \sin 32.7^\circ) = 56.3^\circ$$

#58

critical angle of air-liquid interface is 49.6° .

$$n_{\text{liquid}} = ? \approx \frac{1}{\sin 49.6^\circ}$$



More problems

#3, 7, 15, 17, 25,

Refraction:

Problems: 37, 43, 45, 61, 63

Questions: 17, 20