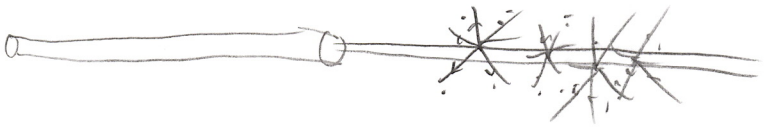
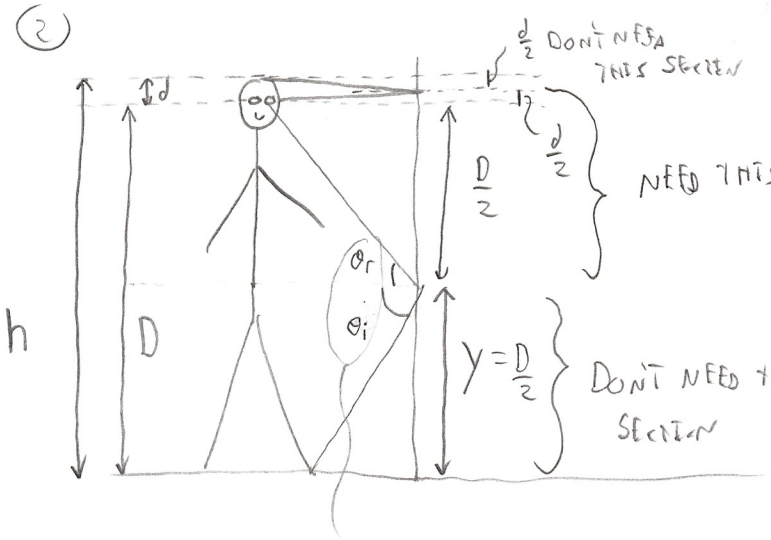
(1)

WILL NOT SEE LIGHT; NO RAYS ENTERING EYE



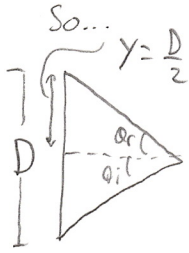
PUT DUST PARTICLES IN THE PATH SO THAT LIGHT SCATTERS OFF THEM AND SOME RAYS NOW ENTER EYE.

(2)

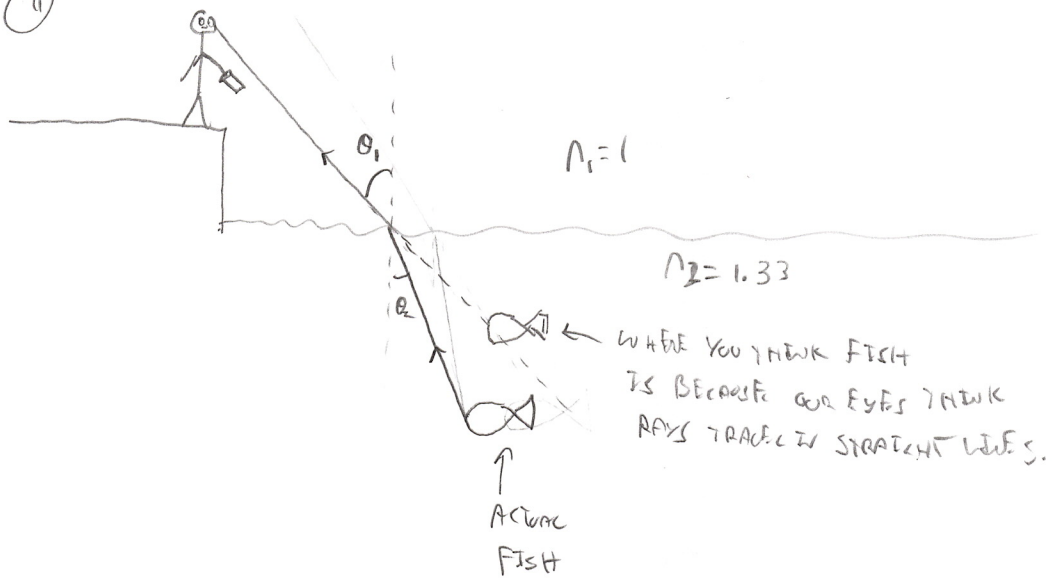


$\theta_i = \theta_r$

So...



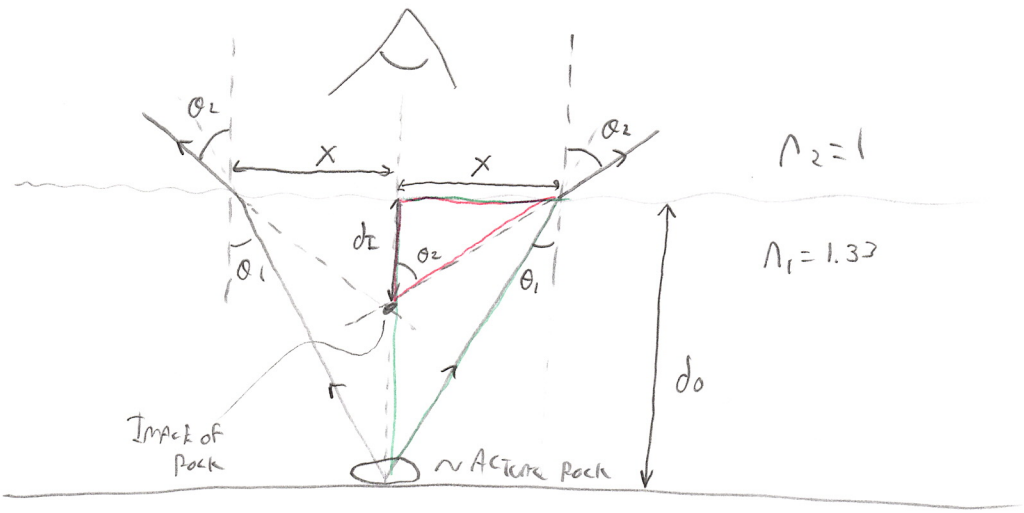
(3) 4/11

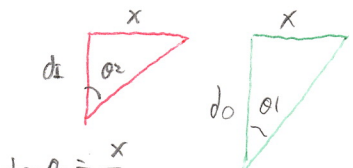


LASER: IS A LIGHT WAVE, WHICH BENDS AT WATER INTERFACE SO AIM AT WHERE YOUR EYES SEE THE FISH

ARROW: WILL NOT BEND AT WATER INTERFACE. AIM IN FRONT OF WHERE YOU SEE THE FISH.

(5)





$\tan\theta_2 = \frac{X}{d_I}$

$X = d_I \tan\theta_2$

$\tan\theta_1 = \frac{X}{d_o}$

$X = d_o \tan\theta_1$

$d_I \tan\theta_2 = d_o \tan\theta_1$

$d_I \frac{\sin\theta_2}{\cos\theta_2} = d_o \frac{\sin\theta_1}{\cos\theta_1}$

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

$\sin\theta_2 = \frac{n_1}{n_2} \sin\theta_1$

$d_I \frac{n_1 \sin\theta_1}{n_2 \cos\theta_2} = d_o \frac{\sin\theta_1}{\cos\theta_1}$

$\frac{d_I n_1}{d_o n_2} = \frac{\cos\theta_2}{\cos\theta_1}$

SMALL ANGLES $\cos\theta \approx 1$

$\frac{d_I n_1}{d_o n_2} \approx 1$

$d_I = \frac{n_2}{n_1} d_o$

INDEX OF REFRACTION WHAT THE OBSERVER IS IN

INDEX OF REFRACTION THAT THE OBJECT IS IN