Question about Total Internal Reflection:

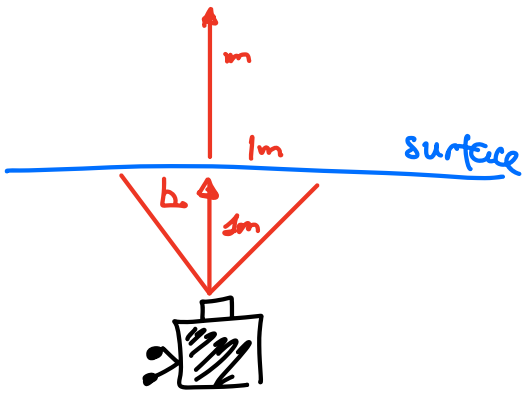
⇒ we need to calculate critical angle θ_c using Snells law

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

$$\Rightarrow \sqrt{2} \cdot \sin(\theta_c) = 1 \sin(90^\circ)$$

$$\Rightarrow \sin\theta_c = \frac{1}{\sqrt{2}}$$

$$\Rightarrow \theta_c = 45^\circ$$



The distance from the camera to the water's surface is the height of triangle created by camera, surface and ray. Radius is the base

$$\tan(45^\circ) = \frac{\text{radius}}{1}$$

$$\text{Radius} = \underline{\underline{1m}}$$