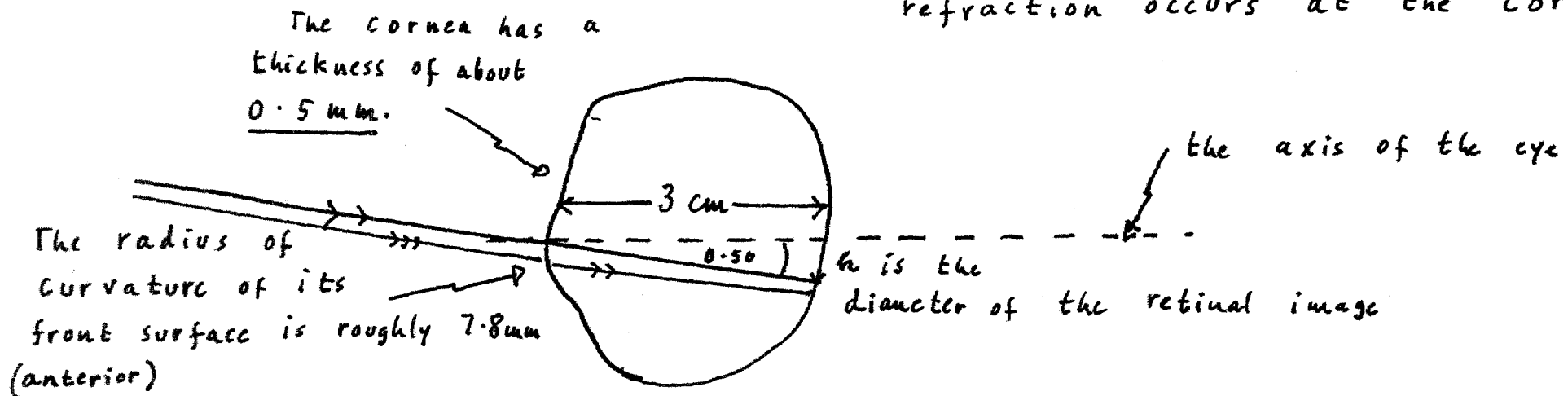


The "reduced" (meaning simplified) human eye, and the image formed of the Moon

Assume the eyeball has a diameter $\approx 3\text{ cm}$.

The diagram is exaggerated in size, for the sake of clarity. Most refraction occurs at the cornea.



or, roughly one-quarter of a millimetre.

From the diagram,

$$\frac{h}{3\text{ cm}} = \tan 0.5^\circ$$

$$\therefore h = 3\text{ cm} \times \tan 0.5^\circ$$

$$= 3\text{ cm} \times 0.0087$$

i.e., $h = 0.026\text{ cm}$

The retina can change its sensitivity according to the rate at which energy reaches it; this is the main method by which the eye becomes darkness-adapted. The condition (transparency) of the crystalline lens is a big factor in determining the quality of an elderly person's eyesight.