

QUIZ 5.

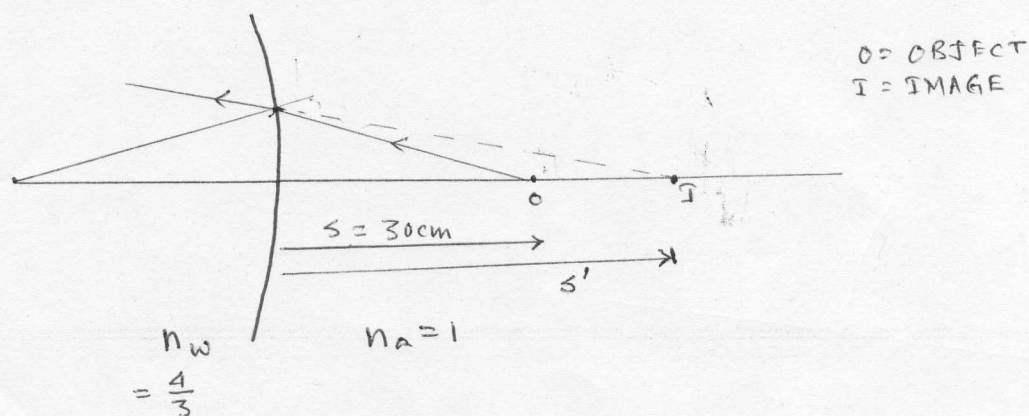
NAME:

Quiz #3c:
Phys270

SOLUTION

Section 0102

1. [10-pts] A goldfish lives in a 20-cm-radius spherical fish bowl. The fish sees a cat watching it. If the cat's face is 30 cm from the edge of the bowl, how far from the edge does the fish see it as being? Ignore the thin glass wall of the bowl, and note that the index of refraction of water is $4/3$. Show your work.



$$\frac{n_1}{s} + \frac{n_2}{s'} = \frac{n_2 - n_1}{R}$$

then we have

$$\frac{1}{30} + \frac{\frac{4}{3}}{s'} = \frac{\frac{1}{3}}{20}$$

then $s' = -80 \text{ cm}$

Ans: 80 cm from the surface on the same side.