

Homework

1. Two important conditions for total internal reflection are:-

- * Angle of incidence should be greater than critical angle.
- * Ray should travel from denser medium to rarer medium.

2. Apparent depth = 6 cm

Let the real depth be x .

$$\frac{x}{6} = \frac{1}{3/4}$$

$$\left[\mu_a = 3/4 \therefore \mu_g = 4/3 \right]$$

$$\Rightarrow \frac{x}{6} = \frac{4}{3}$$

$$\Rightarrow x = \frac{4}{3} \times 6 = 8 \text{ cm}$$

3.

~~Real depth~~

Real depth = Refractive index of glass
Apparent depth

$$\Rightarrow \text{Apparent depth} = \frac{8}{1.6} = \frac{80}{16} = 5 \text{ cm}$$

\therefore Normal shift = Real depth - Apparent depth = $8 - 5 = 3 \text{ cm}$

\therefore The figure will appear to be raised by 3 cm