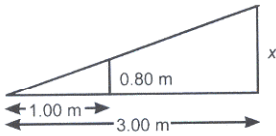


3. Find the length of the square.

$$\begin{aligned} \text{Length of square} &= \sqrt{0.64 \text{ m}^2} \\ &= 0.80 \text{ m} \end{aligned}$$



$$\begin{aligned} \frac{\text{height of large } \Delta}{\text{base of large } \Delta} &= \frac{\text{height of small } \Delta}{\text{base of small } \Delta} \\ \frac{x}{3.00 \text{ m}} &= \frac{0.80 \text{ m}}{1.00 \text{ m}} \\ x &= 2.40 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{area} &= (2.40 \text{ m})^2 \\ &= 5.8 \text{ m}^2 \end{aligned}$$

4.  $\frac{\text{height of large } \Delta}{\text{base of large } \Delta} = \frac{\text{height of small } \Delta}{\text{base of small } \Delta}$

$$\frac{1.54 \text{ m}}{1.96 \text{ m}} = \frac{x}{26.2 \text{ m}}$$

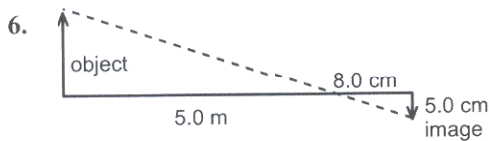
$$x = 20.6 \text{ m}$$

5.  $\frac{\text{height of large } \Delta}{\text{base of large } \Delta} = \frac{\text{height of small } \Delta}{\text{base of small } \Delta}$

$$\frac{10.0 \text{ m}}{(14.0 + x) \text{ m}} = \frac{1.50 \text{ m}}{x \text{ m}}$$

$$10x = 1.50(14.0 + x)$$

$$x = 2.47 \text{ m}$$



a)  $\frac{h_o}{d_o} = \frac{d_i}{h_i}$

$$\frac{h_o}{5.0 \text{ m}} = \frac{5.0 \text{ cm}}{8.0 \text{ cm}}$$

$$h_o = 3.1 \text{ m}$$

b)  $M = \frac{h_i}{h_o}$

$$= \frac{5.0 \text{ cm}}{3.1 \text{ m}} = \frac{5.0 \times 10^{-2} \text{ m}}{3.1 \text{ m}}$$

$$= 0.016$$

c) inverted, real, smaller



Image is inverted, smaller, real.

a)  $M = \frac{h_i}{h_o}$

$$= \frac{0.20 \text{ cm}}{0.90 \text{ cm}}$$

$$\approx 0.22$$

b)  $M = \frac{d_i}{d_o}$

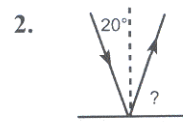
$$= \frac{1.3 \text{ cm}}{5.1 \text{ cm}}$$

$$\approx 0.25$$

### Lesson 3—Reflection

1.  $\angle r = \angle i$

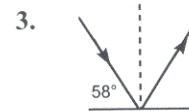
$$= 50.0^\circ$$



$$\angle r = \angle i$$

$$= 20.0^\circ$$

$$\therefore \angle = 70.0^\circ$$



$$\angle i = 90^\circ - 58^\circ$$

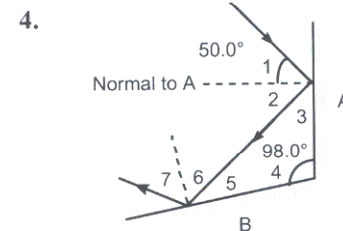
$$= 32^\circ$$

$$\angle r = \angle i$$

$$= 32^\circ$$

$$\therefore \angle = 32^\circ + 32^\circ$$

$$= 64^\circ$$



$$\angle 1 = \angle 2 = 50.0^\circ \text{ -- law of reflection}$$