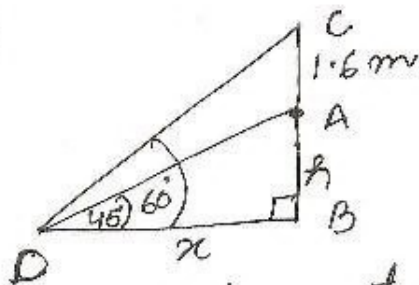


8



let AC represents statue
AB pedestal

In rt $\triangle ABD$

$$\tan 45^\circ = \frac{AB}{BC}$$

$$1 = \frac{h}{x}$$

$$\Rightarrow h = x \dots \textcircled{1}$$

In rt $\triangle CBD$

$$\tan 60^\circ = \frac{BC}{DB}$$

$$\sqrt{3} = \frac{1.6+h}{x}$$

$$\sqrt{3} = \frac{1.6+h}{h} \quad (\because h=x)$$

$$\Rightarrow \sqrt{3}h - h = 1.6$$

$$\Rightarrow h(\sqrt{3}-1) = 1.6$$

$$\Rightarrow h = \frac{1.6}{\sqrt{3}-1}$$

$$= \frac{1.6(\sqrt{3}+1)}{(\sqrt{3})^2-1^2}$$

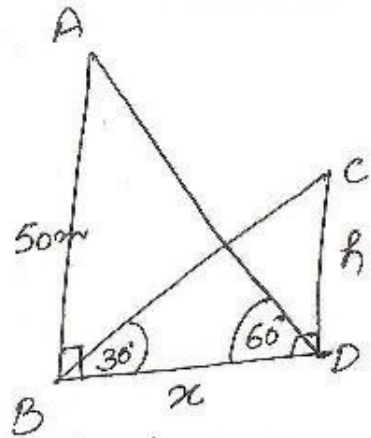
$$= \frac{1.6 \times 2.73}{3-1}$$

$$= \frac{1.6 \times 2.73}{2}$$

$$= 2.184 \text{ m}$$

$$\text{or } 0.8(\sqrt{3}+1) \text{ m}$$

9



AB represents tower,
CD the building

In rt $\triangle ABD$

$$\tan 60^\circ = \frac{AB}{BD}$$

$$\sqrt{3} = \frac{50}{x}$$

$$\Rightarrow x = \frac{50}{\sqrt{3}} \dots \textcircled{1}$$

In rt $\triangle CDB$

$$\tan 30^\circ = \frac{CD}{BD}$$

$$\frac{1}{\sqrt{3}} = \frac{h}{x}$$

$$\Rightarrow h = \frac{x}{\sqrt{3}}$$

$$= \frac{50}{\sqrt{3}} \div \sqrt{3}$$

$$= \frac{50}{3}$$

$$= 16\frac{2}{3}$$

\therefore height of build. = $16\frac{2}{3} \text{ m}$