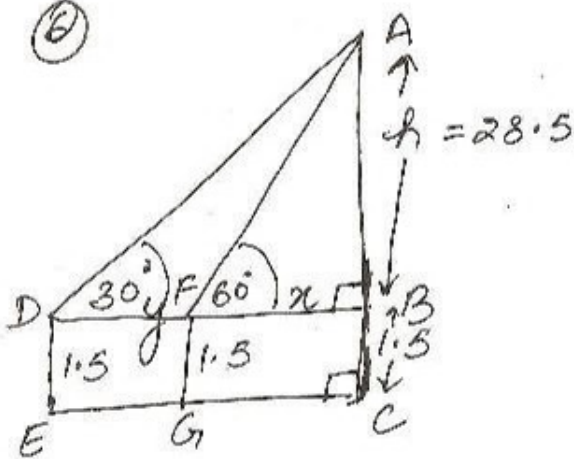


⑥



In rt  $\Delta FBA$

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

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

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

$$\Rightarrow x = \frac{28.5}{\sqrt{3}} \dots \text{①}$$

In rt  $\Delta DBA$

$$\tan 30^\circ = \frac{AB}{DB}$$

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

$$\frac{1}{\sqrt{3}} = \frac{28.5}{x+y}$$

$$\Rightarrow x+y = 28.5\sqrt{3}$$

$$\frac{28.5}{\sqrt{3}} + y = 28.5\sqrt{3}$$

$$\Rightarrow y = 28.5\sqrt{3} - \frac{28.5}{\sqrt{3}}$$

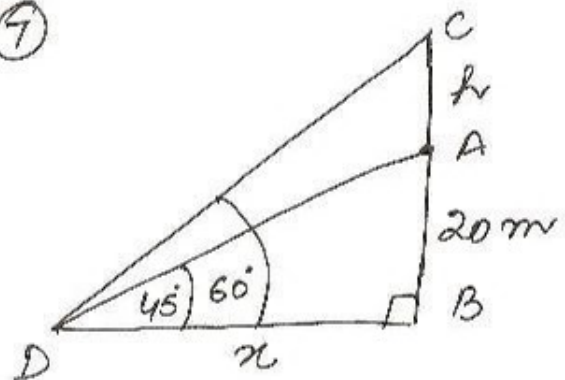
$$= \frac{28.5 \times 3 - 28.5}{\sqrt{3}}$$

$$= \frac{57}{\sqrt{3}} 19\sqrt{3}$$

$$= 19\sqrt{3}$$

$\therefore$  distance travelled =  $19\sqrt{3}m$

⑦



let AB represents AB,  
AC represents AC

In rt  $\Delta ABC$

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

$$1 = \frac{20}{x}$$

$$\Rightarrow x = 20$$

In rt  $\Delta CBD$

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

$$\sqrt{3} = \frac{h+20}{20}$$

$$\Rightarrow h = 20\sqrt{3} - 20$$

$$= 20(\sqrt{3}-1)$$

$\therefore$  height of trans.

tower =  $20(\sqrt{3}-1)m$