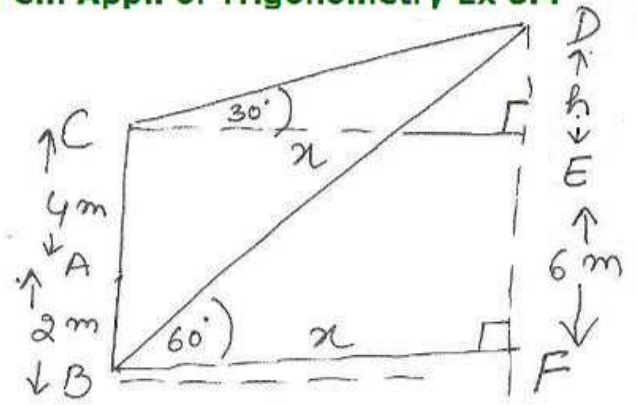


(18) let C and A be points of observation, D represents balloon



In rt $\triangle CED$

$$\tan 30^\circ = \frac{h}{x}$$

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

$$x = h\sqrt{3} \dots \textcircled{1}$$

In rt $\triangle BFD$

$$\tan 60^\circ = \frac{h+6}{x}$$

$$\sqrt{3}x = h+6$$

using $\textcircled{1}$

$$\sqrt{3} \times h\sqrt{3} = h+6$$

$$\Rightarrow 3h - h = 6$$

$$\Rightarrow 2h = 6$$

$$\Rightarrow h = 3$$

\therefore height of balloon above the ground = $h+6$
 $= 3+6$
 $= 9\text{m}$