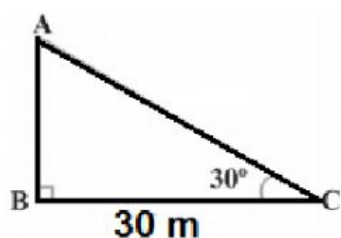


SOME APPLICATIONS OF TRIGONOMETRY

Worksheet-4

The angle of elevation of the top of a tower from a point on the ground, which is 30 m away from the foot of the tower, is 30° . Find the height of the tower. (see Fig)



In the Fig,
BC- Distance from the foot of the tower to the point on the ground.
AB- Height of the Tower
 30° -Angle of elevation.

Soln.

| | |
|--|--|
| <p>In $\triangle ABC$, $\angle B = 90^\circ$</p> <p>$\therefore \tan C = \frac{AB}{BC}$</p> <p>$\tan 30^\circ = \frac{AB}{30}$</p> <p>$\frac{1}{\sqrt{3}} = \frac{AB}{30}$</p> <p>$AB = \frac{30}{\sqrt{3}}$</p> <p>$AB = \frac{30}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}}$</p> <p>$= \frac{30\sqrt{3}}{3}$</p> <p>Height of the Tower = $10\sqrt{3}$ m</p> | <p>NOTE: Fill in the boxes with appropriate words /numbers to make it a solution to the given problem.</p> <p>Rationalise the denominator.</p> |
|--|--|