



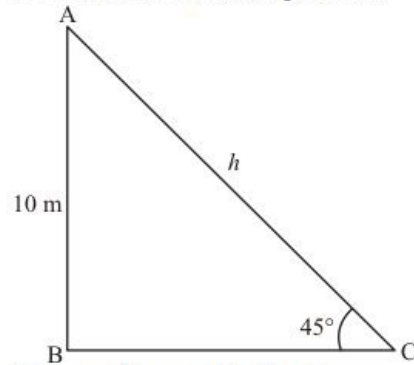
Some Applications of Trigonometry Ex 12.1 Q4

Answer :

Let AC be the wire of length h m and C be the point, makes an angle of 45°

In a triangle ABC , given that height of electric pole is $BC = 2$ m and angle $C = 45^\circ$

Now we have to find the length of wire.



So we use trigonometrically ratios.

In a triangle ABC ,

$$\Rightarrow \sin C = \frac{AB}{AC}$$

$$\Rightarrow \sin 45^\circ = \frac{10}{h}$$

$$\Rightarrow \frac{1}{\sqrt{2}} = \frac{10}{h}$$

$$\Rightarrow h = 10\sqrt{2}$$

Therefore $h = 14.1$

Hence the length of wire is 14.1 meters.

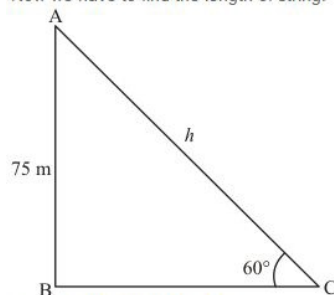
Some Applications of Trigonometry Ex 12.1 Q5

Answer :

Let AC be the string of length h m and C be the point, makes an angle of 60° and the kite is flying at the height of 75 m from the ground level.

In a triangle ABC , given that height of kite is $AB = 75$ m and angle $C = 60^\circ$

Now we have to find the length of string.



So we use trigonometric ratios.

In a triangle ABC ,

$$\Rightarrow \sin C = \frac{AB}{AC}$$

$$\Rightarrow \sin 60^\circ = \frac{75}{h}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{75}{h}$$

$$\Rightarrow h = \frac{150}{\sqrt{3}}$$

Therefore $h = 86.6$

Hence length of string is 87 meters.

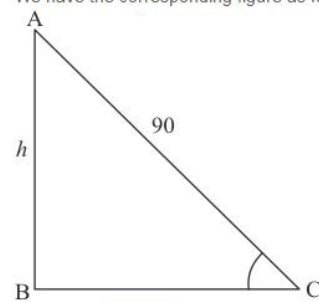
Some Applications of Trigonometry Ex 12.1 Q6

Answer :

Let AB be the kite of height h m and the length of string between kite and a point on the ground is 90 meters. So $AC = 90$ meters and $\angle ACB = \theta$

Now we have to find the height of kite.

We have the corresponding figure as follows



Given that: $\tan \theta = \frac{15}{8}$

Since $\sec^2 \theta = 1 + \tan^2 \theta$

$$\Rightarrow \sec^2 \theta = 1 + \frac{225}{64}$$

$$\Rightarrow \sec^2 \theta = \frac{289}{64}$$

$$\Rightarrow \cos^2 \theta = \frac{64}{289}$$

$$\Rightarrow \cos \theta = \frac{8}{17}$$

Again,

$$\text{Since } \sin^2 \theta = 1 - \cos^2 \theta$$

$$\Rightarrow \sin^2 \theta = 1 - \frac{64}{289}$$

$$\Rightarrow \sin^2 \theta = \frac{289 - 64}{289}$$

$$\Rightarrow \sin \theta = \frac{15}{17}$$

Now, in a triangle ABC

$$\Rightarrow \sin \theta = \frac{h}{90}$$

$$\Rightarrow \frac{15}{17} = \frac{h}{90}$$

$$\Rightarrow h = \frac{15 \times 90}{17}$$

$$\Rightarrow h = 79.41$$

Hence the height kite is 79.41 meters.

***** END *****