

## Chapter-Some Applications of Trigonometry

Q1.

In Fig. 1,  $AB$  is a 6 m high pole and  $CD$  is a ladder inclined at an angle of  $60^\circ$  to the horizontal and reaches up to a point  $D$  of pole. If  $AD = 2.54$  m, find the length of the ladder. (use  $\sqrt{3} = 1.73$ )

Q2.

The ratio of the height of a tower and the length of its shadow on the ground is  $\sqrt{3} : 1$ . What is the angle of elevation of the sun?

Q3.

If a tower 30 m high, casts a shadow  $10\sqrt{3}$  m long on the ground, then what is the angle of elevation of the sun?

Q4.

The tops of two towers of height  $x$  and  $y$ , standing on level ground, subtend angles of  $30^\circ$  and  $60^\circ$  respectively at the centre of the line joining their feet, then find  $x : y$ .

Q5.

**The angle of elevation of the top of a building from the foot of the tower is  $30^\circ$  and the angle of elevation of the top of the tower from the foot of the building is  $45^\circ$ . If the tower is 30 m high, find the height of the building.**

Q6.

A ladder, leaning against a wall, makes an angle of  $60^\circ$  with the horizontal. If the foot of the ladder is 2.5 m away from the wall, find the length of the ladder.

Q7.

An observer, 1.7 m tall, is  $20\sqrt{3}$  m away from a tower. The angle of elevation from the eye of observer to the top of tower is  $30^\circ$ . Find the height of tower.

Q8.

A 7 m long flagstaff is fixed on the top of a tower standing on the horizontal plane. From a point on the ground, the angles of elevation of the top and bottom of the flagstaff are  $60^\circ$  and  $45^\circ$  respectively. Find the height of the tower correct to one place of decimal

Q9.

Two men on either side of a 75 m high building and in line with base of building observe the angles of elevation of the top of the building as  $30^\circ$  and  $60^\circ$ . Find the distance between the two men

Q10.

An observer, 1.7 m tall, is  $20\sqrt{3}$  m away from a tower. The angle of elevation from the eye of observer to the top of tower is  $30^\circ$ . Find the height of tower.