# Trigonometry Application Worksheet-2

**Question 1**.

The angle of elevation of a cloud from point h meter above a lake is α. The angle of depression of its reflection in the lake is $45^0$. Find the height of the cloud

**Question 2**.

A tree breaks due to storm and the broken part bends so that the top of the tree touches the
ground making an angle 300 with it. The distance between the foot of the tree to the point where the top touches the ground is 8m. Find the height of the tree

**Question 3**

The shadow of a building increases by 10 meters when the angle of elevation of the sun rays decreases from $60^0$ to $45^0$, what is the height of the building?

**Question 4**

An airplane, flying horizontally 1000m above the ground, is observed at an angle of elevation $60^0$ from a point on the ground. After a flight of 10 seconds, the angle of elevation at the point of observation changes to $30^0$. Find the speed of the plane in m/s.

**Question 5**

From the top of a h meters high building, the angle of depression to the bottom of a second building is 30 degrees. From the same point, the angle of elevation to the top of the second building is 45 degrees. Calculate the height of the second building.

**Question 6**

From the top of a building 60m high, the angels of depression of the top and bottom of a vertical lamp post are observed to be 30° and 60°respectively. Find [i] horizontal distance between the building and the lamp post [ii] height of the lamp post.

**Question 7**

The angle of depression of two war ships from the top of the light house are $45^0$ and $30^0$ towards west. The war ships are 500 m apart. Find the height of the lighthouse

**Question 8**

At the foot of a mountain the elevation of its summit is 45°. After ascending 1000 m towards the mountain up a slope of 30° inclinations, the elevation is found to be 60°. Find the height of the mountain

**Question 9**

The angle of elevation of a jet fighter from point A on the ground is 60 degrees. After 15 seconds the angle of elevation changes from 60 degrees to 30 degrees. If the jet is flying at a speed of 720 km/hr., find the height at which the jet fighter is flying.

**Question 10**

A straight highway leads to the foot of a tower. A man standing at the top of the tower observes a Truck at an angle of depression of 30°, which is approaching the foot of tower with a uniform speed. Six minutes later, the angle of depression of the truck is found to be 60°. Find the time taken by the truck to reach the foot of the tower

**Answer**

1) h tan(45+α)

2) 8√3

4) 240√3 km/h

6) 34.64m h=40m

8) 500(1+√3) m

9) 1500 √3

10) 3min