INDIAN SCHOOL DARSAIT
DEPARTMENT OF MATHEMATICS

Subject : MATHEMATICS	Topic : SOME APPLICATIONS OF	Date of Worksheet : 23/10/2019
Worksheet no: 9	TRIGONOMETRY	

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Name of the Student _____   Class &Division:_____   Roll Number : ___

S.No.   **Section A-[Basic skills]**

1 . $\dfrac{3}{8} - \dfrac{1}{10} =$

2. $45.5 \text{ x } \dfrac{1}{15} =$

3. $(36 \div 6) 4 =$

4.   Solve for x : $\dfrac{x}{4} = \dfrac{5}{16}$

5.   Evaluate : $\tan 30^0 + \tan 60^0$

Sl.N0.   **Section B -[Chapter based questions]**   Marks

1.   The angles of depression of two ships from the top of a light house and on the same side of it are found to be 45º and 30º respectively. If ships are 200 m apart, find the height of the light house.   4

2.   On a horizontal plane there is a vertical tower with a flag pole on the top of the tower. At a point 9 meters away from the foot of the tower the angle of elevation of the top and bottom of the flag pole are 60^0 and 30º respectively. Find the heights of the tower and the flag pole mounted on it.   4

3.   An aeroplane when flying at a height of 4000m from the ground passes vertically above another aero plane at an instant when the angles of the elevation of the two planes from the same point on the ground are 60° and 45° respectively. Find the vertical distance between the aero planes at that instant. [Take: √3=1.732]   4

4.   A man on the deck of a ship 14m above water level observes that the angle of elevation of the top of the cliff is 60° and the angle of depression of the base of the cliff is 30°. Calculate the distance of the cliff from the ship and the height of the cliff. [Take: √3=1.732]   4

5.   The height of a tree is 10m. It is bent by the wind in such a way that its top touches the ground and makes an angle of 60° with the ground. At what height from the bottom did the tree get bent?   [Take: √3=1.732]   4

6.   A 1.5m tall boy stands at a distance of 3m from a lamp post and casts a shadow of 4.5m on the ground. Find the height of the lamp post.   4

7.   A vertical tower stands on a horizontal plane and is surmounted by a vertical flagstaff of height 5m. From a point on the plane the angle of elevation of the bottom and the   4

top of the flagstaff are 30° and 60°. Find the height of the tower.

8. The angle of elevation of a cloud from a point 60m above a lake is 30^0 and the angle of depression of the reflection of cloud in the lake is 60^0. Find the height of the cloud.   4

SECTION C [HOT QUESTIONS]

1. The angle of elevation of a jet fighter from a point A on the ground is 60°. After a flight of 15seconds, the angle of elevation changes to 30°. If the jet is flying at a speed of 720km/hour, find the constant height at which the jet is flying. [Use: √3=1.732]   4

2. A vertical tower stands on a horizontal plane and is surmounted by a vertical flagstaff of height h. At appoint on the plane,the angles of elevation of the bottom of the flagstaff is α and that of the top of the flagstaff is β.
Prove that the height of the tower is h tanα/ tanβ – tanα   4

3. The angle of elevation of a cloud from a point h meters above a lake is α and the angle of depression of the reflection of cloud in the lake is β. Prove that the height of the cloud is $\underline{\text{h(tan β + tan α)}}$
          tan β - tan α   4