Instructions

Q1. An aeroplane when flying at a height, of 3125m from the ground passes vertically below another plane at an instant when the angles of elevation of the two planes from the same point on the ground are 30° and 60° respectively. Find the distance between the two planes at that instant. **5 Marks**

Q2. A man on the deck of a ship, 12 m above water level, observes that the angle of elevation of the top of a cliff is 60° and the angle of depression of the base of the cliff is 30°. Find the distance of the cliff from the ship and the height of the cliff. $\left[\text{Use } \sqrt{3} = 1.732\right]$ **5 Marks**

Q3. A pole 6m high is fixed on the top of a tower. The angle of elevation of the top of the pole observed from a point P on the ground is 60° and the angle of depression of the point P from the top of the tower is 45°. Find the height of the tower and the distance of point P from the foot of the tower. $(\text{Use}\sqrt{3} = 1.73)$ **5 Marks**

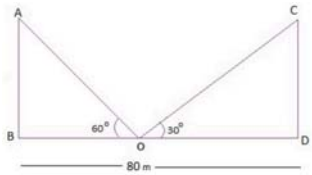
Q4. The angle of elevation of the top of a tower 30m high from the foot of another tower in the same plane is 60° and the angle of elevation of the top of the second tower from the foot of the first tower is 30°. Find the distance between the two towers and also the height of the other tower. **5 Marks**

Q5. A statue, 1.6 m tall, stands on the top of a pedestal. From a point on the ground, the angle of elevation of the top of the statue is 60° and from the same point the angle of elevation of the top of the pedestal is 45°. Find the height of the pedestal. **5 Marks**

Q6. The horizontal distance between two towers is 60 metres. The angle of depression of the top of the first tower when seen from the top of the second tower is 30°. If the height of the second tower is 90 metres, find the height of the first tower. $\left[\text{Use}\sqrt{3} = 1.732\right]$ **5 Marks**

Q7. A fire in a building B is reported on telephone to two fire stations P and Q, 20km a part from each other on a straight road. P observes that the fire is at an angle of 60° to the road and Q observes that it is at an angle of 45° to the road. Which station should send its team and how much will this team have to travel? **5 Marks**

Q8. **5 Marks**



Abhi sees the two poles of equal heights are standing opposite each other on either side of the road, which is 80m wide. From a point between them on the road, the angles of elevation of the top of the poles are 60° and 30°, respectively. Read the above information and answer the below questions.

1. What is the height of the poles?

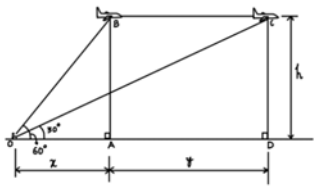
1. $20\sqrt{3}\text{m}$
2. 20m
3. 60m

2. What is the distance from the point of elevation from 60°?

1. 60m
2. 20m
3. 30m

3. What is the distance from the point of elevation from 30°?
1. 20m
2. 60m
3. 40m
4. What is the length of CD?
1. 30m
2. $20\sqrt{3}\text{m}$
3. 29m
4. 120m
5. What is the length of OD?
1. 30m
2. 60m
3. 29m
4. 120m

Q9. **5 Marks**



An aeroplane is flying in the sky. It passes through the point B and C and is at a height of 100m from the ground. The angle of elevation of the aeroplane at points B and C are as given in the figure.
$(\text{use}\sqrt{3} = 1.732)$

1. What is the value of x?
1. 57.735m
2. 115.465m
3. 115.47m
4. 199.99m
2. What is the value of y?
1. 57.735m
2. 115.465m
3. 115.47m
4. 199.99m
3. What is the length of OB?
1. 57.735m
2. 115.465m
3. 115.47m
4. 199.99m
4. What is the length of OC?
1. 57.735m
2. 115.465m
3. 115.47m
4. 199.99m
5. Does the angle of elevation increase if the aeroplane move further forward?
1. Yes
2. No

Q10. From a point on the ground, the angles of elevation of the bottom and the top of a transmission tower fixed at the top of a 20m high building are 45° and 60° respectively. Find the height of the tower. **5 Marks**
$(\text{use}\sqrt{3} = 1.73)$