

Test / Exam Name: Mayh's Chapter 9 Case Study.

Standard: 10th

Subject: Mathematics

Student Name:

Section:

Roll No.:

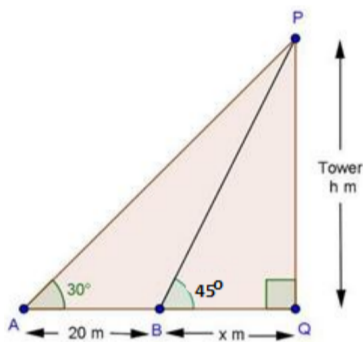
Questions: 43 Time: 01:00 hh:mm Marks: 211

Instructions

1. Attempt all questions.

Q1.

5 Marks



Priya was walking on the road when she saw a high tower in front of her. She observed that when she was standing at point A, the angle of elevation to the top of the tower was 30° . On moving 20m towards the tower to point B, the angle of elevation changed to 45° as shown in the figure. (use $\sqrt{3} = 1.732$)

1. What is the height of the tower?

1. 14.35cm
2. 16.76cm
3. 27.32cm
4. None of these

2. What is the distance of Priya when she is standing at point B from the base of the tower?

1. 14.35cm
2. 16.76cm
3. 27.32cm
4. None of these

3. What is the value of $\angle APQ$?

1. 30°
2. 60°
3. 90°
4. 120°

4. What is the value of $\angle BPQ$?

1. 30°
2. 45°
3. 90°
4. 120°

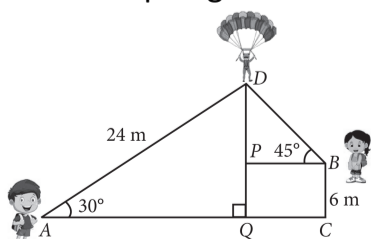
5. What was the distance of Priya from the base of the tower when she was standing at the point A?

1. 47.32cm
2. 45.32cm
3. 43.32cm
4. 41.31cm

Q2. Karan and his sister Riddhima visited at their uncle's place-Bir, Himachal Pradesh. During day time

5 Marks

Karan, who is standing on the ground spots a paraglider at a distance of 24m from him at an elevation of 30° . His sister Riddhima is also standing on the roof of a 6m high building, observes the elevation of the same paraglider as 45° . Karan and Riddhima are on the opposite sides of the paraglider.



Based on the above information, answer the following questions.

1. The distance of paraglider from the ground is:

1. 10m
2. 12m
3. 18m
4. 22m

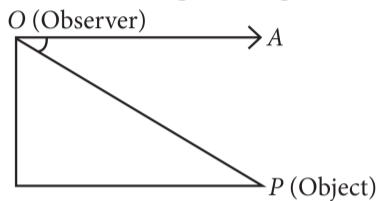
2. The value of PD is:

1. 6m
2. 7m
3. 8m
4. 9m

3. The distance between the paraglider and the Riddhima is:

1. $\sqrt{2}$ m
2. 6m
3. $6\sqrt{2}$ m
4. $\frac{6}{\sqrt{2}}$ m

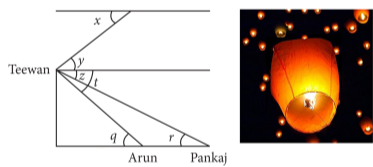
4. In the given figure, $\angle AOP$ is:



1. In the given figure.
 2. Angle of elevation.
 3. Straight angle.
 4. Angle of depression.
5. If A and B are two objects and the eye of an observer is at point O, then the line of sight will be:
1. OA
 2. OB
 3. Both (a) and (b)
 4. None of these.

Q3. Teewan, Arun and Pankaj were celebrating the festival of Diwali in open ground with firecrackers. There is a pedestal in the ground. All of sudden Teewan stands on pedestal and release sky lantern from the top of pedestal.

5 Marks



Based on the above information answer the following questions. (Take $\sqrt{3} = 1.73$)

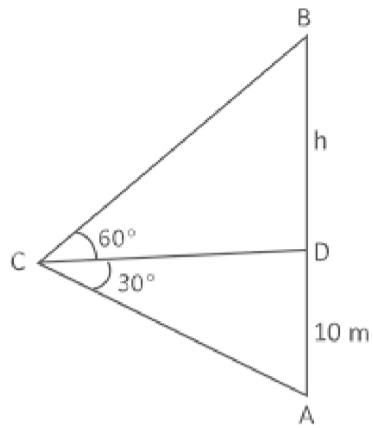
1. Which one is a pair of angle of depression?
 1. $(\angle x, \angle y)$
 2. $(\angle y, \angle z)$
 3. $(\angle z, \angle t)$
 4. $(\angle r, \angle q)$
2. If the position of Pankaj is 25m away from the base of pedestal and $\angle r = 30^\circ$, then find the height of:
 1. 14.45m
 2. 15.5m
 3. 16.36m
 4. 17.36m
3. If the height of pedestal is 30m, $\angle t = 45^\circ$, and $\angle z = 30^\circ$, then the horizontal distance between Arun and Pankaj is:
 1. 24.5m
 2. 19.5m
 3. 20m
 4. 21.9m
4. If the vertical height of sky lantern from the top of pedestal is 12m and $\angle y = 30^\circ$, then distance between Teewan and sky lantern is
 1. 20m
 2. 16.67m
 3. 24m
 4. 19.86m

5. If $\angle q = 60^\circ$, and position of Arun is 15 m away from the base of pedestal, then find the height of pedestal.

1. 16.25m
2. 25m
3. 25.95m
4. 26m

Q4.

5 Marks



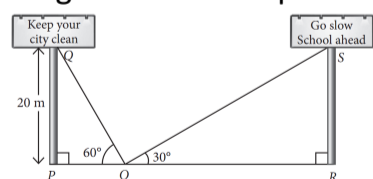
A person standing in a deck of a ship observes a floating tower. The angle of elevation to the top and bottom of the tower is as given in the figure. (use $\sqrt{3} = 1.732$)

1. What is the value of h?
 1. 34.64m
 2. 20m
 3. 17.32m
 4. 30m
2. What is the length of CD?
 1. 34.64m
 2. 21m
 3. 17.32m
 4. 31mm
3. What is the length of CA?
 1. 34.64m
 2. 20m
 3. 17.32m
 4. 32mm
4. What is the length of CB?
 1. 34.64m
 2. 23m
 3. 17.32m
 4. 33m
5. Will the angle of elevation change if the tower height changes?
 1. Yes
 2. No

Q5. Two hoardings are put on two poles of equal heights standing on either side of the road. From a point between them on the road the angle of elevation of the top of poles are 60° and 30° respectively.

5 Marks

Height of the each pole is 20m.



Based on the above information, answer the following questions. (Take $\sqrt{3} = 1.73$)

1. Find the length of PO.
 1. 20m
 2. $20\sqrt{3}$ m
 3. $\frac{20}{\sqrt{m}}$
 4. None of these.
2. Find the length of RO.
 1. 20m
 2. $20\sqrt{3}$ m
 3. $\frac{20}{\sqrt{m}}$
 4. None of these.

3. The width of the road is:

1. 31.23m
2. 35.68m
3. 39.73m
4. 46.24m

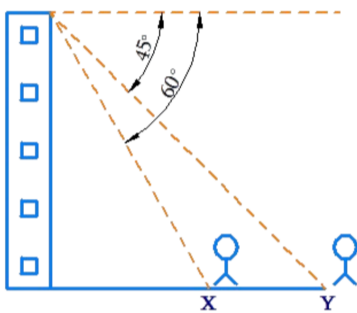
4. If the angle of elevation made by pole PQ is 45° , then the length of PO =

1. 20m
2. $20\sqrt{3}$ m
3. $\frac{20}{\sqrt{m}}$
4. None of these.

5. Angle formed by the line of sight with the horizontal when the point being viewed is above the horizontal level is known as:

1. Angle of depression.
2. Angle of elevation.
3. Right Angle.
4. Reflex angle.

Q6.



5 Marks

Two friends X and Y were standing in front of a 100m tall tower. The angle of depression from the top of the tower to the two friends are as given in the figure.

1. What is the distance of X from the tower?

1. $\frac{100}{\sqrt{3}}$
2. $\frac{200}{\sqrt{3}}$
3. $\frac{100}{\sqrt{2}}$
4. $100\sqrt{3}$

2. What is the distance of Y from the tower?

1. 171.2m
2. 100m
3. 172.2m
4. 174.2m

3. What is the distance between X and Y?

1. 111.67m
2. 123.98m
3. 42.27m
4. 45.98m

4. What is the value of the unknown angle of the smaller triangle?

1. 30°
2. 45°
3. 60°
4. 90°

5. What is the value of the unknown angle of the bigger triangle?

1. 30°
2. 45°
3. 60°
4. 90°

Q7. A group of students of class X visited India Gate on an education trip. The teacher and students had interest in history as well. The teacher narrated that India Gate, official name Delhi Memorial, originally called All-India War Memorial, monumental sandstone arch in New Delhi, dedicated to the troops of British India who died in wars fought between 1914 and 1919. The teacher also said that India Gate, which is located at the eastern end of the Rajpath (formerly called the Kingsway), is about 138 feet (42 metres) in height.

5 Marks



1. What is the angle of elevation if they are standing at a distance of 42m away from the monument?

1. 30°
2. 45°
3. 60°
4. 0°

2. They want to see the tower at an angle of 60° . So, they want to know the distance where they should stand and hence find the distance.

1. 25.24m
2. 20.12m
3. 42m
4. 24.64m

3. If the altitude of the Sun is at 60° , then the height of the vertical tower that will cast a shadow of length 20m is:

1. $20\sqrt{3}\text{m}$
2. $\frac{20}{\sqrt{3}\text{m}}$
3. $\frac{15}{\sqrt{3}\text{m}}$
4. $15\sqrt{3}\text{m}$

5. The ratio of the length of a rod and its shadow is 1 : 1. The angle of elevation of the Sun is:

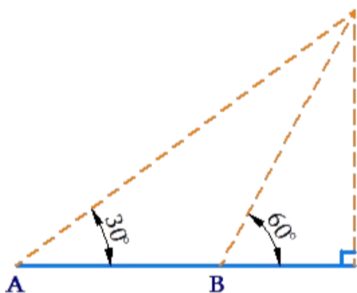
1. 30°
2. 45°
3. 60°
4. 90°

5. The angle formed by the line of sight with the horizontal when the object viewed is below the horizontal level is:

1. corresponding angle
2. angle of elevation
3. angle of depression
4. complete angle

Q8.

5 Marks



A girl while playing in a garden sees a fence in front of her of height 20m. In the first position of the girl, the angle of elevation is 30° . When she approaches nearer, it changes to 60° (use $\sqrt{3} = 1.732$)

1. What is the distance of the girl from the fence from the first position?

1. 34.64m
2. 11.54m
3. 23.1m
4. None of these

2. What is the distance of the girl from the fence from the second position?

1. 34.64m
2. 11.54m
3. 23.1m
4. None of these

3. How much distance does the girl move?

1. 34.64m
2. 11.54m
3. 23.1m
4. None of these

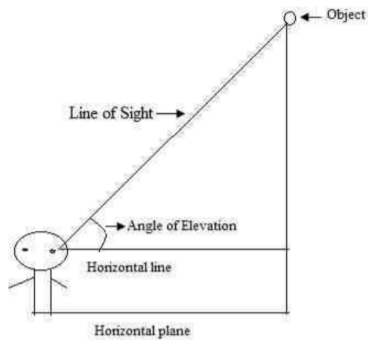
4. What is the length of the line of sight of the girl when she is in the first position ?

1. 39.99m

2. 23.09m
 3. 11.54m
 4. None of these
5. What is the length of the line of sight of the girl when she is in the second position?
1. 39.99m
 2. 23.09m
 3. 11.54m
 4. None of these

Q9.

5 Marks



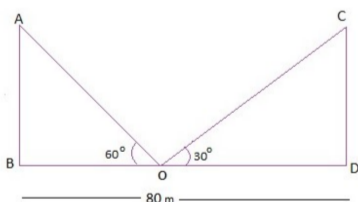
Ravi was standing at a distance of 10m from the lamp post. While playing tennis his ball got stuck at the top of the lamp post. He observed that the angle of elevation of the ball was. Ravi was of height 2m.

(use $\sqrt{3} = 1.732$)

1. Find the height of the ball from the ground.
 1. 10m
 2. 11m
 3. 12m
 4. 13m
2. Find the length of the line of sight of the ball.
 1. 14.14m
 2. 15.15m
 3. 16.16m
 4. 17.17m
3. What is the angle of depression of the ball?
 1. 30°
 2. 45°
 3. 60°
 4. 90°
4. Will the angle of elevation increase if Ravi moves away from the lamp post?
 1. Yes
 2. No
5. What is the value of the unknown angle of the triangle?
 1. 30°
 2. 45°
 3. 60°
 4. 90°

Q10.

5 Marks



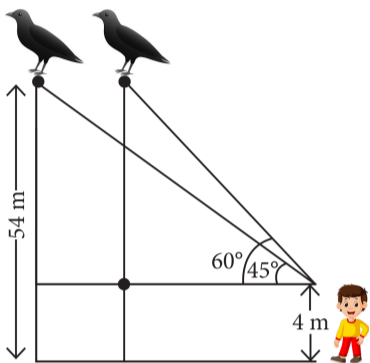
Abhi sees the two poles of equal heights are standing opposite each other on either side of the road, which is 80m wide. From a point between them on the road, the angles of elevation of the top of the poles are 60° and 30° , respectively. Read the above information and answer the below questions.

1. What is the height of the poles?
 1. $20\sqrt{3}$ 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. $20\sqrt{3}$ m
 3. 29m
 4. 120m
5. What is the length of OD?
 1. 30m
 2. 60m
 3. 29m
 4. 120m

Q11. A boy 4m tall spots a pigeon sitting on the top of a pole of height 54m from the ground. The angle of elevation of the pigeon from the eyes of boy at any instant is 60° . The pigeon flies away horizontally in such a way that it remained at a constant height from the ground. After 8 seconds, the angle of elevation of the pigeon from the same point is 45° .

5 Marks

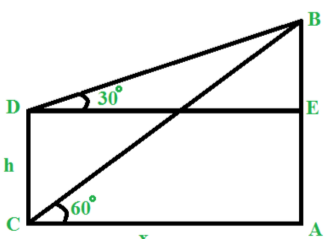


Based on the above information, answer the following questions. (Take $\sqrt{3} = 1.73$)

1. Find the distance of first position of the pigeon from the eyes of the boy.
 1. 54m
 2. 100m
 3. $\frac{100}{\sqrt{3}}$ m
 4. $100\sqrt{3}$ m
2. If the distance between the position of pigeon increases, then the angle of elevation.
 1. Increases
 2. Decreases
 3. Remains unchanged
 4. Can't say
3. Find the distance between the boy and the pole.
 1. 50m
 2. $\frac{50}{\sqrt{3}}$ m
 3. $50\sqrt{3}$ m
 4. $60\sqrt{3}$ m
4. How much distance the pigeon covers in 8 seconds?
 1. 12.13m
 2. 19.60m
 3. 21.09m
 4. 26.32m
5. Find the speed of the pigeon.
 1. 2.63 m/ sec
 2. 3.88 m/ sec
 3. 6.7 m/ sec
 4. 9.3 m/ sec

Q12.

5 Marks

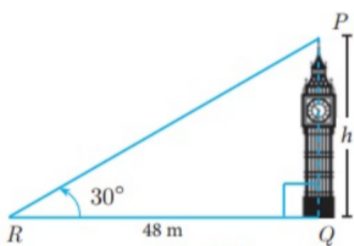


A small child CD is standing at a distance of 5m from his father AB. The angle of elevation of the father from the foot and head of the child is as given in the figure. (use $\sqrt{3} = 1.732$)

1. What is the height of the father?
 1. 8.66m
 2. 9.99m
 3. 2.88m
 4. None of these
2. What is the value of BC?
 1. 8.66m
 2. 9.99m
 3. 2.88m
 4. None of these
3. What is the value of BD?
 1. 8.66m
 2. 9.99m
 3. 5.77m
 4. None of these
4. Will the angle of elevation increase if the child moves towards his father ?
 1. Yes
 2. No
5. Will the angle of elevation increase if the father moves towards his child?
 1. Yes
 2. No

Q13.

5 Marks



Mr. Sen is standing at a distance of 48m from the clock. The angle of inclination is as given in the figure. (use $\sqrt{3} = 1.732$)

1. What is the height of the clock?
 1. 27.71m
 2. 55.42m
 3. 5.87m
 4. 45.66 m
2. What is the length of PR?
 1. 27.71m
 2. 55.42m
 3. 5.87m
 4. 45.66m
3. What is the value of $\angle RPQ$?
 1. 30°
 2. 45°
 3. 60°
 4. 90°
4. Will the angle of elevation increase if the Mr Sen moves towards the clock?
 1. Yes
 2. No
5. Will the angle of elevation increase if the Mr Sen away from the clock?
 1. Yes
 2. No

Q14. A contractor plans to install two slides for the children to play in a park. For the children below the age of 5 years, she prefers to have a slide whose top is at a height of 1.5m, and is inclined at an angle of 30° to the ground, whereas for elder children, she wants to have a steep slide at a height of 3m, and inclined at an angle of 60° to the ground. Read the above information and answer the below questions.

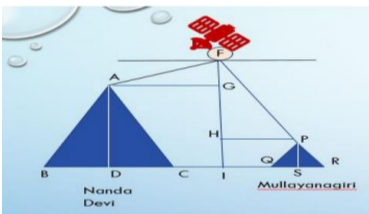
5 Marks

1. What is the length of the slide for below 5 years?
 1. 3m

2. 4m
3. 5m
4. 6m
2. What is the length of the slide for elders children?
 1. $8\sqrt{3}m$
 2. $6\sqrt{3}m$
 3. $2\sqrt{3}m$
 4. 3m
3. What is the measure of inclined for above 5 years?
 1. 90°
 2. 60°
 3. 180°
 4. 270°
4. What is the measure of inclined for below 5 years?
 1. 90°
 2. 30°
 3. 180°
 4. 270°
5. What is the height of slide for below 5 years?
 1. 1.5m
 2. 7.5m
 3. 3m
 4. 8.5m

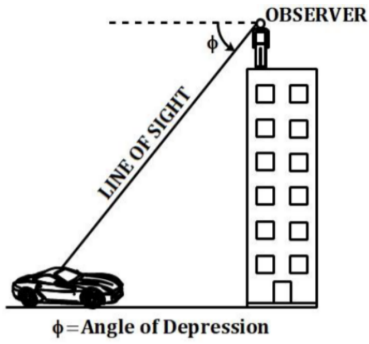
Q15. A Satellite flying at height h is watching the top of the two tallest mountains in Uttarakhand and Karnataka, them being Nanda Devi (height 7,816m) and Mullayanagiri (height 1,930 m). The angles of depression from the satellite, to the top of Nanda Devi and Mullayanagiri are 30° and 60° respectively. If the distance between the peaks of the two mountains is 1937 km, and the satellite is vertically above the midpoint of the distance between the two mountains.

5 Marks



1. The distance of the satellite from the top of Nanda Devi is:
 1. 1139.4km
 2. 577.52km
 3. 1937km
 4. 1025.36km
2. The distance of the satellite from the top of Mullayanagiri is:
 1. 1139.4km
 2. 577.52km
 3. 1937km
 4. 1025.36km
3. The distance of the satellite from the ground is:
 1. 1139.4km
 2. 577.52km
 3. 1937km
 4. 1025.36km
4. What is the angle of elevation if a man is standing at a distance of 7816m from Nanda Devi?
 1. 30°
 2. 45°
 3. 60°
 4. 0°
5. If a mile stone very far away from, makes 45° to the top of Mullanyangiri mountain. So, find the distance of this mile stone from the mountain:
 1. 1118.327km
 2. 566.976km
 3. 1937km

Q16.



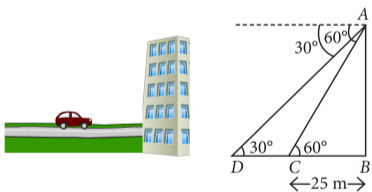
5 Marks

Rahul is driving a car. On his way, he approaches a tall building and observes that Rajesh is standing at the top of that building. A signboard beside the building read - Angle of depression = 60° . The distance from the building at which Rahul stops his car is 50cm.

- Is the angle of elevation from Rahul's car to the top of building, where Rajesh is standing the same as the angle of depression?
 - Yes
 - No
- What is the angle of elevation from Rahul's car to the top of the building, where Rajesh is standing?
 - 30°
 - 60°
 - 90°
 - 120°
- What is the height of the tower?
 - 50cm
 - $50\sqrt{3}$ cm
 - 60cm
 - $60\sqrt{3}$ cm
- What is the length of the line of sight?
 - 50cm
 - 70cm
 - 100cm
 - 120cm
- Will the angle of elevation increase or decrease as the car approaches the building?
 - Increase
 - Decrease

Q17. Roh is standing at the top of the building observes a car at an angle of 30° , which is approaching the foot of the building with a uniform speed. 6 seconds later, angle of depression of car formed to be 60° , whose distance at that instant from the building is 25m.

5 Marks



Based on the above information, answer the following questions.

- Height of the building is:
 - $25\sqrt{2}$ m
 - 50m
 - $25\sqrt{3}$ m
 - 25m
- Distance between two positions of the car is:
 - 40m
 - 50m
 - 60m
 - 75m
- Total time taken by the car to reach the foot of the building from starting point is:
 - 4sec
 - 3sec
 - 6sec
 - 9sec

4. The distance of the observer from the car when it makes an angle of 60° is:

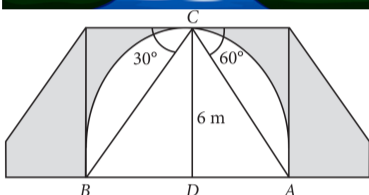
1. 25m
2. 45m
3. 50m
4. 75m

5. The angle of elevation increases:

1. When point of observation moves towards the object.
2. When point of observation moves away from the object.
3. When object moves away from the observer.
4. None of these.

Q18. One day while sitting on the bridge across a river Arun observes the angles of depression of the banks on opposite sides of the river are 30° and 60° respectively as shown in the figure. (Take $\sqrt{3} = 1.73$)

5 Marks



Based on the above information, answer the following questions.

1. If the bridge is at a height of 6m, then AD =

1. 6m
2. $\frac{\sqrt{3}}{6}$ m
3. $6\sqrt{3}$ m
4. $\frac{6}{\sqrt{3}}$ m

2. BD =

1. 6m
2. $6\sqrt{3}$ m
3. $\sqrt{3}$ m
4. $10\sqrt{3}$ m

3. Width of the river is:

1. 10.85m
2. 13.87m
3. 15.85m
4. 19.85m

4. The angles of elevation and depression are always:

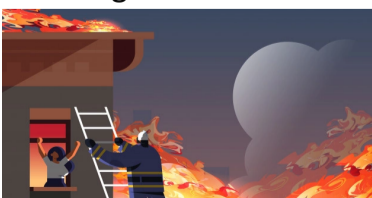
1. Acute angles
2. Obtuse angles
3. Right angles
4. Straight angles

5. If BD = 21m, then height of the bridge is:

1. 7m
2. 21m
3. $7\sqrt{3}$ m
4. $\frac{7}{\sqrt{3}}$ m

Q19. There is fire incident in the house. The house door is locked so, the fireman is trying to enter the house from the window. He places the ladder against the wall such that its top reaches the window as shown in the figure.

5 Marks



Based on the above information, answer the following questions

1. If window is 6m above the ground and angle made by the foot of ladder to the ground is 30° , then length of the ladder is:

1. 8m
2. 10m
3. 12m
4. 14m

2. If fireman place the ladder 5m away from the wall and angle of elevation is observed to be 30° , then length of the ladder is:

1. 5m
2. $\frac{10}{\sqrt{3}}$ m
3. $\frac{15}{\sqrt{2}}$ m
4. 20m

3. If fireman places the ladder 2.5m away from the wall and angle of elevation is observed to be 60° , then find the height of the window. (Take $\sqrt{3} = 1.73$)

1. 4.325m
2. 5.5m
3. 6.3m
4. 2.5m

4. If the height of the window is 8m above the ground and angle of elevation is observed to be 45° , then horizontal distance between the foot of ladder and wall is:

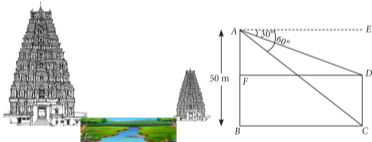
1. 2m
2. 4m
3. 6m
4. 8m

5. If the fireman gets a 9m long ladder and window is at 6m height, then how far should the ladder be placed?

1. 5m
2. $3\sqrt{5}$ m
3. 3m
4. 4m

Q20. There are two temples on each bank of a river. One temple is 50m high. A man, who is standing on the top of 50m high temple, observed from the top that angle of depression of the top and foot of other temple are 30° and 60° respectively. (Take $\sqrt{3} = 1.73$)

5 Marks



Based on the above information, answer the following questions.

1. Measure of $\angle ADF$ is equal to:

1. 45°
2. 60°
3. 30°
4. 90°

2. Measure of $\angle ACB$ is equal to:

1. 45°
2. 60°
3. 30°
4. 90°

3. Width of the river is:

1. 28.90m
2. 26.75m
3. 25m
4. 27m

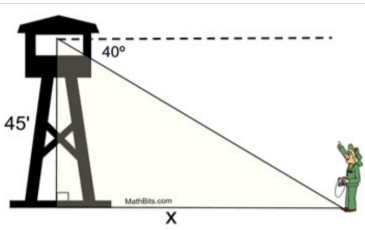
4. Height of the other temple is:

1. 32.5m
2. 35m
3. 33.33m
4. 40m

5. Angle of depression is always:

1. Reflex angle.
2. Straight.
3. An obtuse angle.
4. An acute angle.

Q21.

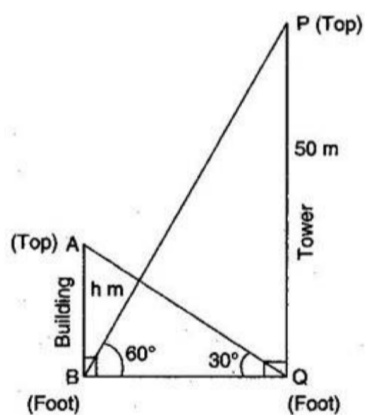


5 Marks

A hunter found a tall tower inside a dense forest. He was planning to climb the tower and noticed that the angle of depression was 40° and the height of the tower was 45cm. His fellow colleague however, said that the angle of depression is actually 10° less than what the hunter has measured. Keeping into account the new angle of depression, answer the following questions.

1. What is the new angle of elevation to the top of the tower?
 1. 30°
 2. 60°
 3. 45°
 4. 90°
2. What is the new angle of depression to the top of the tower?
 1. 30°
 2. 60°
 3. 45°
 4. 90°
3. What is the new distance of the hunter from the base of the tower?
 1. 45cm
 2. $45\sqrt{3}$ cm
 3. 25cm
 4. $25\sqrt{3}$ cm
4. Did the distance of the hunter increase or decrease due to change of angle of depression?
 1. Increase
 2. Decrease
5. If the height of the tower decreases, will the angle of depression increase or decrease?
 1. Increase
 2. Decrease

Q22.



5 Marks

A building is situated at a distance from a tall tower of length 50m. The angle of elevation of the top of the tower and that of the building from the foot of each other is as given in the figure.

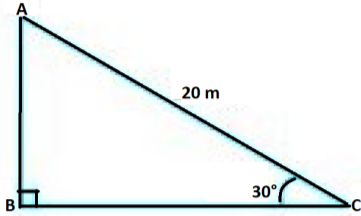
(use $\sqrt{3} = 1.732$)

1. What is the distance between the building and the tower?
 1. 28.86m
 2. 16.67m
 3. 57.73m
 4. 33.32m
2. What is the height of the building?
 1. 28.86m
 2. 16.67m
 3. 57.73m
 4. 33.32m
3. What is the length of BP?
 1. 28.86m

2. 16.67m
 3. 57.73m
 4. 33.32m
4. What is the length of AQ?
1. 28.86m
 2. 16.67m
 3. 57.73m
 4. 33.34m
5. Will the angles of elevation change if the buildings move apart?
1. Yes
 2. No

Q23.

5 Marks



Pinky has seen a circus artist is climbing a 20m long rope, which is tightly stretched and tied from the top of a vertical pole to the ground. A few questions came into her mind. Observe the figure above and answer the below questions. (use $\sqrt{3} = 1.732$)

1. What is the height of the pole, if the angle made by the rope with the ground level is 30° ?

1. 10m
2. 9m
3. 8m
4. 7m

2. What is the length of AC in the above figure?

1. 10m
2. 7m
3. 20m
4. 6m

3. What is the measure of $\angle ABC$?

1. 90°
2. 80°
3. 180°
4. 270°

4. Which formula can be used to find the height of the pole?

1. Sine formula
2. Cosine formula

5. What is the length of BC in the above figure?

1. 10m
2. 7m
3. 17.3m
4. 6m

Q24. Suppose a straight vertical tree is broken at some point due to storm and the broken part is inclined at a certain distant from the foot of the tree.

5 Marks



Based on the above information answer the following questions.

1. If the top of upper part of broken tree touches ground at a distance of 30m (from the foot of the tree) and makes an angle of inclination 30° then the height of remaining part of the tree is Based on the above information, answer the following questions.

1. $\sqrt{3}m$

2. $30\sqrt{3}\text{m}$

3. $\frac{30}{\sqrt{3}}\text{m}$

4. 30m

2. If the top of broken part of a tree touches the ground at a point whose distance from foot of the tree is equal to height of remaining part, then its angle of inclination is:

1. 30°

2. 60°

3. 45°

4. None of these.

3. The angle of elevation are always:

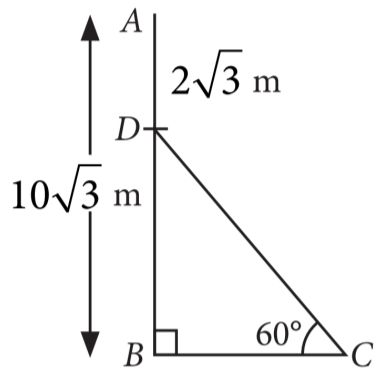
1. Obtuse angle.

2. Acute angle.

3. Right angle.

4. Reflex angle.

4. If $10\sqrt{3}\text{m}$, $AD = 2\sqrt{3}\text{m}$, then $CD =$



1. 9m

2. 11m

3. 14m

4. 16m

5. If the height of a tree is 6m , which is broken by wind in such a way that its top touches the ground and makes an angle 30° with the ground. At what height from the bottom of the tree is broken by the wind?

1. 2m

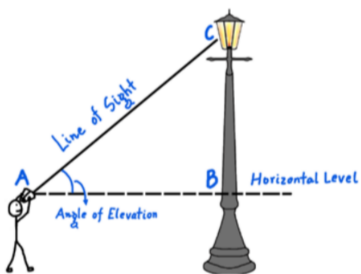
2. 4m

3. 8m

4. 10m

Q25.

5 Marks



Raju was walking on the street when he came across a lamp post at a distance of 20cm from him. He observed that the angle of elevation to the top of the lamp post is from top of his head. Raju's height is 100cm .

1. What is the height of the lamp post?

1. 100cm

2. 110cm

3. 120cm

4. 130cm

2. What is the length of the line of sight of Raju to the top of the lamp post?

1. 10cm

2. $10\sqrt{2}\text{cm}$

3. 20cm

4. $20\sqrt{2}\text{cm}$

3. What is the value of angle $\angle ACB$?

1. 30°

2. 45°

3. 60°

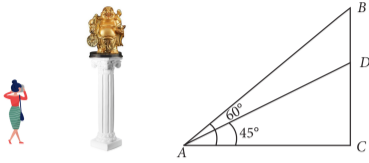
4. 90°

4. If Raju moves towards the tower, will the angle of elevation increase?

1. Yes
2. No
5. If Raju was of a shorter height, the angle of elevation would have.
 1. Increased
 2. Decreased

Q26. In an exhibition, a statue stands on the top of a pedestal. From the point on ground where a girl is clicking the photograph of the statue 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 pedestal is 45° .

5 Marks



Based on the above information, answer the following questions.

1. If the height of the pedestal is 20m, then the distance between girl and the foot of the pedestal is:

1. 20m
2. 40m
3. 60m
4. 80m

2. If the height of the pedestal is 20m, then the height of the statue is:

1. $20\sqrt{3}$ m
2. $20(\sqrt{3} - 1)$ m
3. $20(\sqrt{3} + 1)$ m
4. $10(\sqrt{3} - 1)$ m

3. If the height of the statue is 1.6m, then height of the pedestal is:

1. $0.8(\sqrt{3} - 1)$ m
2. $1.6(\sqrt{3} + 1)$ m
3. $0.8(\sqrt{3})$ m
4. $0.8(\sqrt{3} + 1)$ m

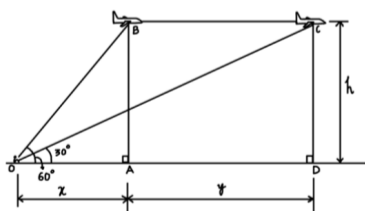
4. If the total height of the statue and pedestal is 39m, then find the length of AC.

1. 13m
2. $12\sqrt{3}$ m
3. $13\sqrt{3}$ m
4. $15\sqrt{3}$ m

5. If the height of the pedestal is 35m, then length of AD is:

1. $32\sqrt{2}$ m
2. $40\sqrt{2}$ m
3. $35(\sqrt{2} + 1)$ m
4. $35(\sqrt{2} - 1)$ m

Q27.



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.

(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?

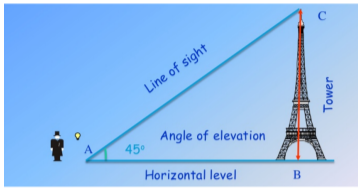
1. 57.735m
2. 115.465m
3. 115.47m
4. 199.99m

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

Q28.



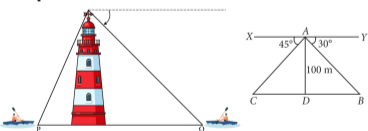
5 Marks

Mr. Henry visited the Eiffel tower. He was standing at a place from where the angle of elevation to the top of the tower was 45° . The height of the tower was 300m.

1. At what distance was Mr. Henry standing from the tower?
 1. 100m
 2. 200m
 3. 300m
 4. 400m
2. Will the angle of elevation of the mid point of the tower as seen by Mr. Henry be 30° .
 1. Yes
 2. No
3. What is the length of the line of sight?
 1. $100\sqrt{3}$ m
 2. $200\sqrt{3}$ m
 3. $300\sqrt{2}$ m
 4. $400\sqrt{3}$ m
4. What is the value of the $\angle ACB$?
 1. 22.5°
 2. 45°
 3. 67°
 4. 90°
5. Will the angle of elevation increase if Mr. Henry starts moving towards the tower?
 1. Yes
 2. No

Q29. A boy is standing on the top of light house. He observed that boat P and boat Q are approaching to light house from opposite directions. He finds that angle of depression of boat P is 45° and angle of depression of boat Q is 30° . He also knows that height of the light house is 100m.

5 Marks



Based on the above information, answer the following questions.

1. Measure of $\angle ACD$ is equal to:
 1. 30°
 2. 45°
 3. 60°
 4. 90°
2. If $\angle YAB = 30^\circ$, then $\angle ABD$ is also 30° , Why?
 1. Vertically opposite angles.
 2. Alternate interior angles.
 3. Alternate exterior angles.
 4. Corresponding angles.
3. Length of CD is equal to:
 1. 90m
 2. 60m
 3. 100m

4. 80m

4. Length of BD is equal to:

1. 50m

2. 100m

3. $100\sqrt{2}$ m

4. $100\sqrt{3}$ m

5. Length of AC is equal to:

1. $100\sqrt{2}$ m

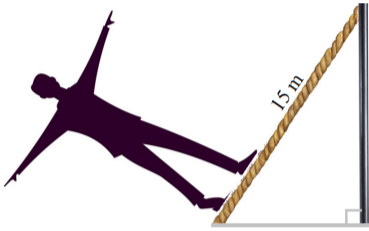
2. $100\sqrt{3}$ m

3. 50m

4. 100m

Q30. A circus artist is climbing through a 15m long rope which is highly stretched and tied from the top of a vertical pole to the ground as shown below. Based on the above information, answer the following questions.

5 Marks



1. Find the height of the pole, if angle made by rope to the ground level is 45° .

1. 15m

2. $15\sqrt{2}$ m

3. $\frac{15}{\sqrt{3}}$ m

4. $\frac{15}{\sqrt{2}}$ m

2. If the angle made by the rope to the ground level is 45° , then find the distance between artist and pole at ground level.

1. $\frac{15}{\sqrt{2}}$ m

2. $15\sqrt{2}$ m.

3. 15m

4. $15\sqrt{3}$ m

3. Find the height of the pole if the angle made by the rope to the ground level is 30° .

1. 2.5m

2. 5m

3. 7.5m

4. 10m

4. If the angle made by the rope to the ground level is 30° and 3 m rope is broken, then find the height of the pole.

1. 2m

2. 4m

3. 5m

4. 6m

5. Which mathematical concept is used here?

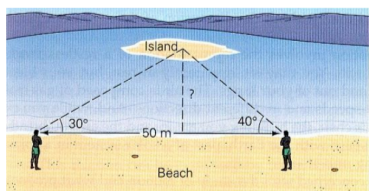
1. Similar Triangles.

2. Pythagoras Theorem.

3. Application of Trigonometry.

4. None of these.

Q31.



5 Marks

Mohan and Sohan went on a vacation to a seaside. They spotted an island at a certain distance from the sea shore. The two friends planned to stand at a distance of 50m from each other such that the angle of elevation from Mohan to the island is while that from Sohan is as shown in the figure above.

1. What is the value of the unknown angle of the triangle whose vertices are Mohan, Sohan and the island?

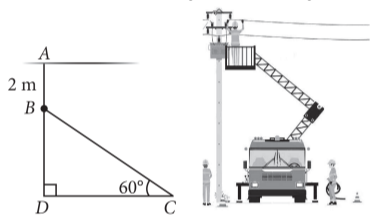
1. 90°

2. 100°

3. 110°
4. None of these
2. What is the approximate perpendicular distance of the island from the line joining Mohan and Sohan? (Take $\tan 40^\circ = 0.8391$)
 1. 17.10cm
 2. 34.65cm
 3. 12.98cm
 4. None of these
3. State TRUE or FALSE: The angle of elevation for both Mohan and Sohan increase when the distance between them decreases?
 1. True
 2. False
4. What is the distance of the island from Mohan from the point where he is standing?
 1. 45.87cm
 2. 34.2cm
 3. 78.34cm
 4. 11.2cm
5. What is the distance of the island from Sohan from the point where he is standing? (Take $\cos 40^\circ = 0.766$)
 1. 75.1cm
 2. 29.2cm
 3. 26.6cm
 4. 34.2cm

Q32. An electrician has to repair an electric fault on the pole of height of 8m. He needs to reach a point 2m below the top of the pole to undertake the repair work.

5 Marks

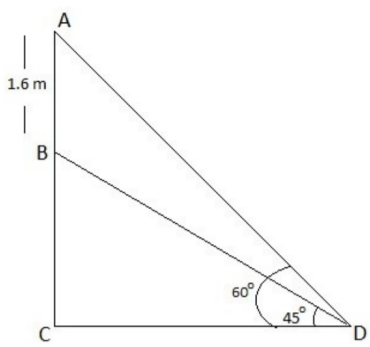


Based on the above information, answer the following questions.

1. Length of BD is:
 1. 10m
 2. 6m
 3. 4m
 4. 4m
2. What should be the length of ladder, so that it makes an angle of 60° with the ground?
 1. $4\sqrt{3}$ m
 2. $2\sqrt{3}$ m
 3. $3\sqrt{3}$ m
 4. $5\sqrt{3}$ m
3. The distance between the foot of ladder and pole is:
 1. $6\sqrt{3}$ m
 2. $4\sqrt{3}$ m
 3. $3\sqrt{3}$ m
 4. $2\sqrt{3}$ m
4. What will be the measure of $\triangle BCD$ when BD and CD are equal?
 1. 30°
 2. 45°
 3. 60°
 4. 75°
5. Find the measure of $\triangle DBC$.
 1. 15°
 2. 60°
 3. 30°
 4. 45°

Q33.

5 Marks



Pinky sees that a statue, 1.6m 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° . Read the above information and answer the below questions.

1. What is the height of the pedestal?

1. $0.8(\sqrt{3} + 1)$ m
2. 0.8m
3. $\sqrt{3} + 1$ m
4. 1.6m

2. What is the length of CD?

1. 30m
2. $0.8(\sqrt{3} + 1)$ m
3. 29m
4. 120m

3. What is the measure of BDC ?

1. 90°
2. 45°
3. 180°
4. 270°

4. What is the measure of ADC?

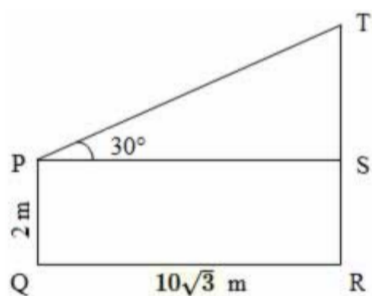
1. 90°
2. 60°
3. 180°
4. 270°

5. What is the measure of BCD ?

1. 90°
2. 60°
3. 180°
4. 270°

Q34.

5 Marks



A man PQ of height 2m is standing in front of a pole TR. The angle of elevation of the pole as seen by the man is given in the figure. (use $\sqrt{3} = 1.732$)

1. What is the height of the tower?

1. 12m
2. 20m
3. 23.99m
4. 10m

2. What is the value of PT?

1. 12m
2. 20m
3. 23m
4. 10m

3. What is the value of $\angle PTS$?

1. 30°
2. 45°
3. 60°

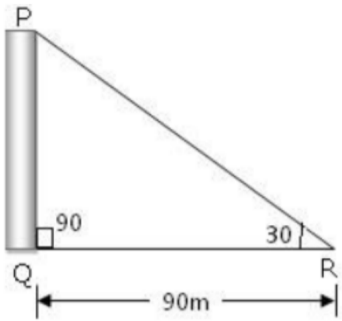
4. None of these

4. Will the angle of elevation increase if the man moves closer to the pole?

1. Yes
 2. No
5. Will the angle of elevation increase if the pole is smaller in height?
1. Yes
 2. No

Q35.

5 Marks



A worker was standing at a distance of 90m from a furnace whose angle of elevation as seen by the man was 30° . (use $\sqrt{3} = 1.732$)

1. What is the value of $\angle QPR$?

1. 30°
2. 45°
3. 60°
4. 90°

2. What is the height of the furnace?

1. 51.9m
2. 52.9m
3. 53.9m
4. 54.9m

3. What is the length of PR?

1. 101.9m
2. 103.9m
3. 105.9m
4. 111.9 m

4. For the angle of elevation to increase, the furnace has to be.

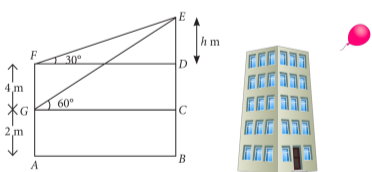
1. Taller
2. Shorter

5. Should the man move forward or backward so that the angle of elevation decreases?

1. Forward
2. Backward

Q36. There are two windows in a house. First window is at the height of 2m above the ground and other window is 4m vertically above the lower window. Ankit and Radha are sitting inside the two windows at points G and F respectively. At an instant, the angles of elevation of a balloon from these windows are observed to be 60° and 30° as shown below.

5 Marks



Based on the above information, answer the following questions.

1. Who is more closer to the balloon?

1. Ankit.
2. Radha.
3. Both are at equal distance.
4. Can't be determined.

2. Value of DF is equal to:

1. $\frac{h}{\sqrt{3}}$ m
2. $h\sqrt{3}$ m
3. $\frac{h}{2}$ m
4. $2h$ m

3. Value of h is:

1. 2
2. 2
3. 4

4. 5

4. Height of the balloon from the ground is:

1. 4m
2. 6m
3. 8m
4. 10m

5. If the balloon is moving towards the building, then both angle of elevation will:

1. Remain same.
2. Increases.
3. Decreases.
4. Can't be determined.

Q37.

5 Marks



Boojho went to a park. He went up the slide to play. The angle of elevation θ Of the slide is 30° But the base from which the angle of elevation is measured is 5cm above the ground level and the distance from the staircase is 10cm. (use $\sqrt{3} = 1.732$)

1. What is the distance of the staircase from the point from which the angle of elevation of the slide is measured?

1. 5cm
2. 10cm
3. 15cm
4. 20cm

2. What is the angle of depression from the top of the slide to its base?

1. 30°
2. 60°
3. 90°
4. 120°

3. What is the height of the staircase?

1. 5.77cm
2. 10.77cm
3. 15.77cm
4. None of these

4. What is the length of the slide?

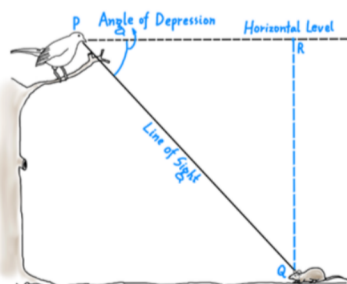
1. 9.874cm
2. 8.46cm
3. 11.547cm
4. None of these

5. Will the angle of elevation increase or decrease if the staircase was made taller?

1. Increase
2. Decrease

Q38.

5 Marks



A mouse was walking past a tree when it saw a bird sitting on the trunk of the tree. The angle of elevation of the bird from the mouse was 45° and the height of the trunk from the ground was 25cm.

1. What would be the angle of depression of the bird as observed by the mouse?

1. 30°
2. 45°
3. 60°
4. 90°

2. How far was the mouse from the tree?

1. 25cm

2. 50cm
3. 75cm
4. 100cm

3. What is the angle of elevation of the bird as seen by the mouse, when the mouse is just at the base of the tree?

1. 0°
2. 30°
3. 60°
4. 180°

4. Will the angle of depression increase if the bird was sitting at a higher branch?

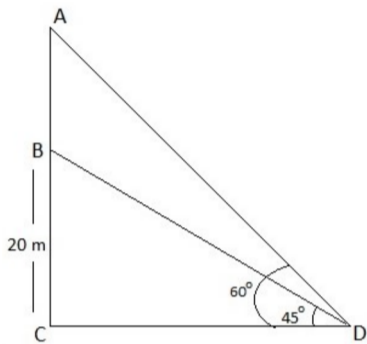
1. Yes
2. No

5. What is the value of the $\angle RPQ$?

1. 0°
2. 30°
3. 45°
4. 60°

Q39.

5 Marks



Chandu sees 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. Read the above information and answer the below questions.

1. What is the height of the tower?

1. 10m
2. $20(\sqrt{3} - 1)$ m
3. 20m
4. 30m

2. What is the measure of $\angle BCD$?

1. 90°
2. 60°
3. 180°
4. 270°

3. What is the measure of $\angle BDC$?

1. 90°
2. 45°
3. 180°
4. 270°

4. What is the measure of $\angle ADC$?

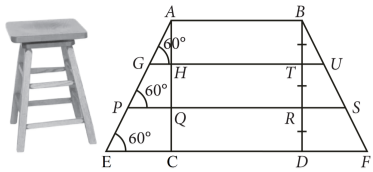
1. 90°
2. 60°
3. 180°
4. 270°

5. What is the length of AC?

1. 20m
2. $20\sqrt{3}$
3. 29m
4. 120m

Q40. Aditi purchase a wooden bar stool for her living room with square A top of side 2m and having height of 6m above the ground. Also each leg is inclined at an angle of 60° to the ground as shown in the figure (not drawn to scale).

5 Marks



Based on the above information, answer the following questions. (Take $\sqrt{3} = 1.73$)

1. Find the length of the each leg.

1. 5.9m
2. 6.93m
3. 7.3m
4. 8.2m

2. Find the length of GH.

1. 0.53m
2. 1m
3. 1.15m
4. 2.73m

3. The length of second step is:

1. 4.3m
2. 4.99m
3. 5.68m
4. 6.78m

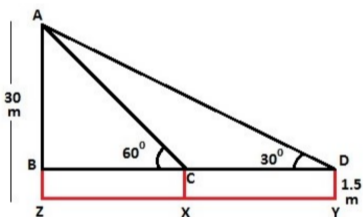
4. The length of PQ =

1. 1.56m
2. 2.31m
3. 3.34m
4. 5.68m

5. The length of first step is:

1. 4.78m
2. 5.34m
3. 6.62m
4. 7.82m

Q41.



5 Marks

A 1.5m tall boy is standing at some distance from a 30m tall building. The angle of elevation from his eyes to the top of the building increases from 30° to 60° as he walks towards the building.

Read the above information and answer the below questions. (Use $\sqrt{3} = 1.732$)

1. Is XY parallel to CD?

1. Yes
2. No

2. What is the height of the building?

1. 30m
2. 20m
3. 10m
4. 11m

3. What is the measure of AB?

1. 30m
2. 28.5m
3. 29m
4. 120m

4. Find the distance he walked towards the building?

1. 32.9m
2. 80m
3. 60m
4. 30m

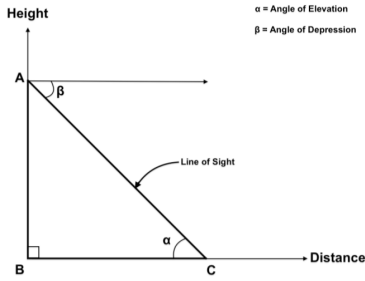
5. What is the length of CD?

1. 30m
2. 32.9m

3. 29m

4. 120m

Q42.



5 Marks

Boojho was playing in a garden. He went near the fence and saw that a bird was sitting over it. The angle of depression of the bird was found to be 60° , when he was standing at a distance of 10m from the fence.

1. What is the angle of elevation of the bird as seen by Boojho ?

1. 30°

2. 45°

3. 60°

4. 90°

2. Is the angle of elevation equal to the angle of depression?

1. Yes

2. No

3. What is the height of the fence as calculated by Boojho?

1. 10cm

2. $10\sqrt{3}$ cm

3. 20cm

4. $20\sqrt{3}$ cm

4. Will the angle of depression increase or decrease if the fence was taller?

1. Increase

2. Decrease

5. Will the angle of depression increase or decrease if Boojho was at a distance of 20cm from the fence?

1. Increase

2. Decrease

Q43. A ladder, leaning against a wall, makes an angle of 60° with the horizontal. If the foot of the ladder is 2.5 m away from the wall, find the length of the ladder.

1 Mark