SOME APPLICATIONS OF TRIGONOMETRY

MCQs & A and R WORK SHEET

Test / Exam Name: Some Applications Of Trigonometry **Standard: 10th** **Subject: Mathematics**

Student Name: ..... **Section:** ..... **Roll No.:** .....

Questions: 30 **Time: 01:00 hh:mm** **Negative Marks: 0** **Marks: 30**

Instructions

1. MULTIPLE CHOICE QUESTIONS.

Q1. The angle of elevation of an object viewed is the angle formed by the line of sight with the horizontal when it is: **1 Mark**

A Above the horizontal level **B** Below the horizontal level **C** At the horizontal level **D** None of the above

Ans: A Above the horizontal level

Solution:

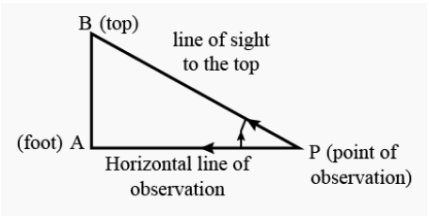
In the figure, AB is a vertical object with A as foot and B as top.

P is the point of observation.

So, PA is the line of horizontal sight and we have to raise our head if we look at B.

The angle, described in this case ∠PAB when PB is the line of sight.

But by definition, ∠APB is the angle of elevation.



Q2. The _____ of an object can be determined with the help of trigonometric ratios. **1 Mark**

A Shape **B** Height **C** Weight **D** None of these

Ans: B Height

Solution:

The height of an object can be determined with the help of trigonometric ratios if angle of elevation/depression and one side is known.

Q3. The _____ is the line drawn from the eye of an observer to the point in the object viewed by the observer. **1 Mark**

A Horizontal line **B** Vertical line **C** None of these **D** Line of sight

Ans: D Line of sight

Solution:

The line of sight is the imaginary line drawn from the eye of an observer to the point in the object viewed by the observer.

The angle between the line of sight and the ground is called angle of elevation.

Q4. The _____ of an object is the angle formed by the line of sight with the horizontal when the object is above the horizontal level. **1 Mark**

A Angle of elevation **B** Angle of depression **C** Angle of projection **D** None of these

Ans: A Angle of elevation

Solution:

The angle of elevation of an object is the angle formed by the line of sight with the horizontal when the object is above the horizontal level.

Q5. The angle of elevation and the angle of depression from an object on the ground to an object in the air are related as: **1 Mark**

A Equal **B** Less than **C** None of these **D** Greater than

Ans: A Equal

Solution:

The angle of elevation and the angle of depression from an object on the ground to an object in the air are related as equal if the height of objects are the same.

Q6. _____ is an instrument for measuring the angles of elevation and depression. **1 Mark**

A Microscope **B** Telescope **C** Periscope **D** Theodolite

Ans: D Theodolite

Solution:

A theodolite is an instrument for measuring the angles of elevation and depression.

A Theodolite is a more accurate instrument for measuring horizontal and vertical angles.

Q7. The angle of depression of a car parked on the road from the top of a 150m high tower is 30°. The distance of the car from the tower (in metres) is: **1 Mark**

A $50\sqrt{3}$ **B** $150\sqrt{3}$ **C** $150\sqrt{2}$ **D** 75

Ans: B $150\sqrt{3}$

Solution:

We have a high tower whose height (AC) = 150m

Angle of depression = 30°

Here given angle of depression $\angle DCB = 30^\circ$

We know,

$\angle DCB = \angle ACB$ (Alternate angles)

Let,

Distance the car from tower AB = x m

In triangle ABC we know,

$\Rightarrow \tan 30^\circ = \frac{AC}{AB}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{150}{x}$

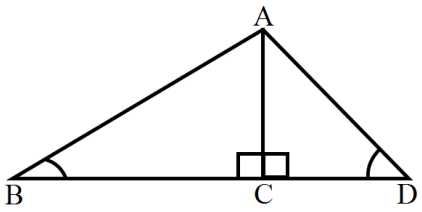
$\Rightarrow x = 150\sqrt{3}$m

Q8. Two men are on opposite sides of a tower. They observe the angles of elevation of the top of the tower as 30° and 45° respectively. If the height of the tower is 100m, then the distance between them is: **1 Mark**

A $100(1-\sqrt{3})$m **B** $100(\sqrt{3}-1)$m **C** none of these **D** $100(\sqrt{3}+1)$m

Ans: D $100(\sqrt{3}+1)$m

Solution:



Let the height of the tower AC = 100m

Now, in triangle ABC,

$\tan 30^\circ = \frac{AC}{BC}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{100}{BC}$

$\Rightarrow BC = 100\sqrt{3}$m

Now, in triangle ACD,

$\tan 45^\circ = \frac{AB}{CD}$

$\Rightarrow 1 = \frac{100}{CD}$

$\Rightarrow CD = 100$m

Therefore, the required distance $= BC + CD = 100\sqrt{3} + 100$

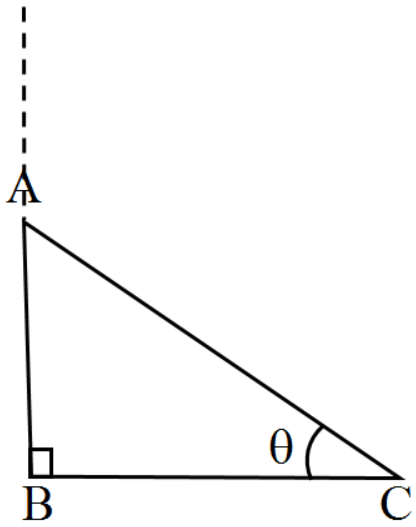
$= 100(\sqrt{3}+1)$m

Q9. A tree 12m high is broken by the wind in such a way that its top touches the ground and makes an angle 30° with the ground. The height at which from the bottom the tree is broken by the wind is: **1 Mark**

A 9m **B** 6m **C** 4m **D** 8m

Ans: C 4m

Solution:



Let tree broke from the height of x from point A, then length of the broken tree be (12 - x) meters and angle of elevation $= \theta = 30°$

In triangle ABC, $\sin 30° = \frac{AB}{AC}$

$\Rightarrow \frac{1}{2} = \frac{x}{12-x}$

$\Rightarrow 2x = 12 - x$

$\Rightarrow 3x = 12$

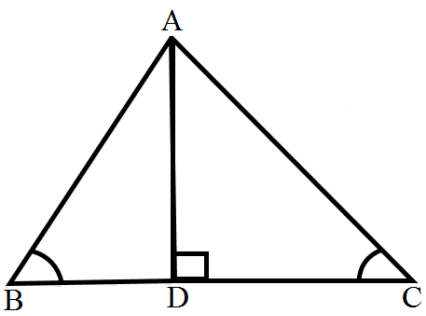
$\Rightarrow x = 4m$

Q10. Two men are on opposite sides of a tower. They observe the angles of elevation of the top of the tower as 60° and 45° respectively. If the height of the tower is 60m, then the distance between them is: **1 Mark**

A $20(\sqrt{3}+3)$m **B** $20(3-\sqrt{3})$m **C** None of these **D** $20(\sqrt{3}-3)$m

Ans: A $20(\sqrt{3}+3)$m

Solution:



Let the height of the tower = AD = 60m and angles of elevation of the top of the tower of two men are 60° and 45° respectively.

To find: Distance between two men = BC

In triangle ABD,

$\tan 60° = \frac{60}{BD}$

$\Rightarrow \sqrt{3} = \frac{60}{BD}$

$\Rightarrow BD = \frac{60}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = 20\sqrt{3}$m

In triangle ADC,

$\tan 45° = \frac{60}{DC}$

$\Rightarrow 1 = \frac{60}{DC}$

$\Rightarrow DC = 60$m

$\therefore BC = BD + DC = 20\sqrt{3} + 60$

$= 20(\sqrt{3}+3)$m

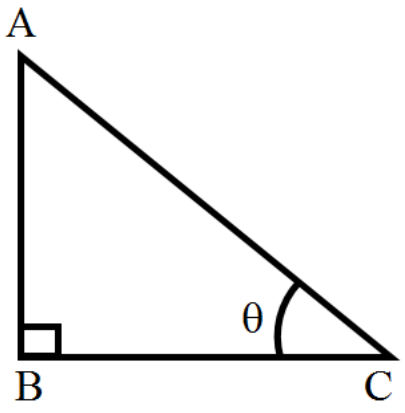
Q11. A ladder 14m long rests against a wall. If the foot of the ladder is 7m from the wall, then the angle of elevation is: **1 Mark**

A 60° **B** 45° **C** 30° **D** 75°

Ans: A 60°

Solution:

Let AB be the ladder of length 14m and BC = 7m



Let angle of elevation

$\angle ACB = \theta$

$\therefore \cos\theta = \frac{BC}{AC}$

$\Rightarrow \cos\theta = \frac{7}{14}$

$\Rightarrow \cos\theta = \frac{1}{2}$

$\Rightarrow \cos\theta = \cos 60^\circ$

$\Rightarrow \theta = 60^\circ$

Q12. An electric pole is $10\sqrt{3}$m high and its shadow is 10m in length, then the angle of elevation of the sun is: **1 Mark**

A 45° **B** 15° **C** 30° **D** 60°

Ans: D 60°

Solution:

Let AB be the electric pole of height $10\sqrt{3}$m and its shadow be BC of length 10m.

And the angle of elevation of the sun be θ.

$\therefore \tan\theta = \frac{AB}{BC}$

$\Rightarrow \tan\theta = \frac{10\sqrt{3}}{10}$

$\Rightarrow \tan\theta = \sqrt{3}$

$\Rightarrow \tan\theta = \tan 60^\circ$

$\Rightarrow \theta = 60^\circ$

Q13. If the length of a shadow of a tower is increasing, then the angle of elevation of the sun is: **1 Mark**

A Decreasing **B** Increasing **C** Zero

D Neither increasing nor decreasing

Ans: A Decreasing

Solution:

If the elevation moves towards the tower, it is increasing and if its elevation moves away from the tower, it decreases.

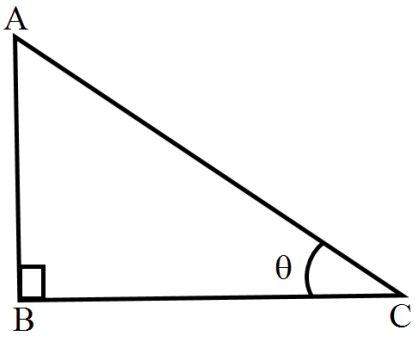
Hence if the shadow of a tower is increasing, then the angle of elevation of the sun is not increasing.

Q14. A pole 10m high cast a shadow 10m long on the ground, then the sun's elevation is: **1 Mark**

A 15° **B** 45° **C** 30° **D** 60°

Ans: B 45°

Solution:



Let the lenght of the shadow BC be 10meters.

Then the height of the pole AB is 10meter.

$\therefore \tan\theta = \frac{AB}{BC}$

$\Rightarrow \tan\theta = \frac{10}{10}$

$\Rightarrow \tan\theta = 1$

$\Rightarrow \tan\theta = \tan 45^\circ$

$\Rightarrow \theta = 45^\circ$

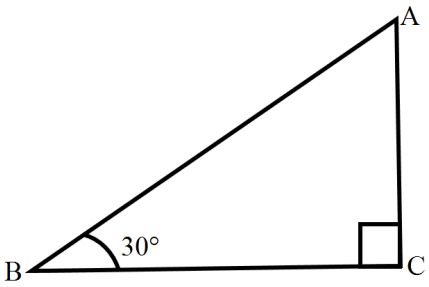
Q15. A river is 60m wide. A tree of unknown height is on one bank. The angle of elevation of the top of the tree from the point exactly opposite to the foot of the tree, on the other bank, is 30°. The height of the tree is: **1 Mark**

A $60\sqrt{3}$m **B** $20\sqrt{3}$m **C** $10\sqrt{3}$m **D** $30\sqrt{3}$m

Ans: B $20\sqrt{3}$m

Solution:

Let BC = 60m be the width of the river



and angle of elevation = 30°

To find: Height of the tree AC

$\therefore \tan 30^\circ = \frac{AC}{BC}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{AC}{60}$

$\Rightarrow AC = \frac{60}{\sqrt{3}}$

$= \frac{60}{\sqrt{3}} \times \frac{\sqrt{3}}{\sqrt{3}} = 20\sqrt{3}$m

Therefore, the height of the tree is $20\sqrt{3}$m.

Q16. The angle of depression of a boat from the top of a cliff 300m high is 60°. The distance of the boat from the foot of the cliff is: **1 Mark**

A $100\sqrt{3}$ **B** 100 **C** $300\sqrt{3}$ **D** 300

Ans: A $100\sqrt{3}$

1. $100\sqrt{3}$

Q17. If a flag staff of length 6m is placed on the top of a tower throws a shadow of $2\sqrt{3}$m along the ground, then the angle that the sun makes with the ground is: **1 Mark**

A 45° **B** 30° **C** 75° **D** 60°

Ans: D 60°

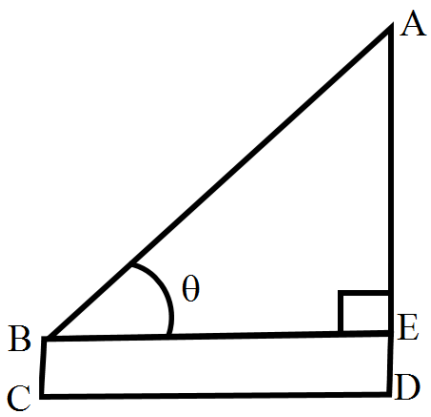
4. 60°

Q18. An observer 1.5m tall is 23.5m away from a tower 25m high. The angle of elevation of the top of the tower from the eye of the observer is: **1 Mark**

A 30° **B** 60° **C** 45° **D** None of these

Ans: C 45°

Solution:



Let θ be the angle of elevation,

The height of the tower AD = 25m

And CD = 23.5m

In triangle ABE,

$\therefore \tan\theta = \frac{AE}{BE} = \frac{AD - ED}{CD}$

$\Rightarrow \tan\theta = \frac{25 - 1.5}{23.5} = \frac{23.5}{23.5} = 1$

$\Rightarrow \tan\theta = \tan 45^\circ\theta$

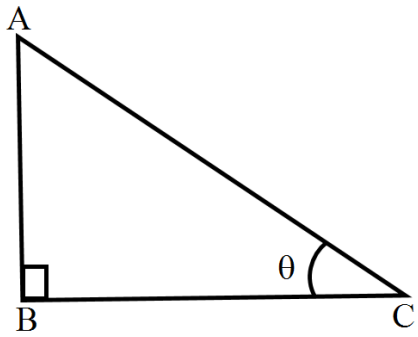
$\Rightarrow \theta = \tan 45^\circ$

Q19. A ladder 12m long rests against a wall. If it reaches the wall at a height of $6\sqrt{3}$m, then the angle of elevation is: **1 Mark**

A 30° **B** 45° **C** 75° **D** 60°

Ans: D 60°

Solution:



Then the height AB is $6\sqrt{3}$meter.

$\therefore \sin\theta = \frac{AB}{AC}$

$\Rightarrow \sin\theta = \frac{6\sqrt{3}}{12}$

$\Rightarrow \sin\theta = \frac{\sqrt{3}}{2}$

$\Rightarrow \sin\theta = \sin 60^\circ$

$\Rightarrow \theta = 60^\circ$

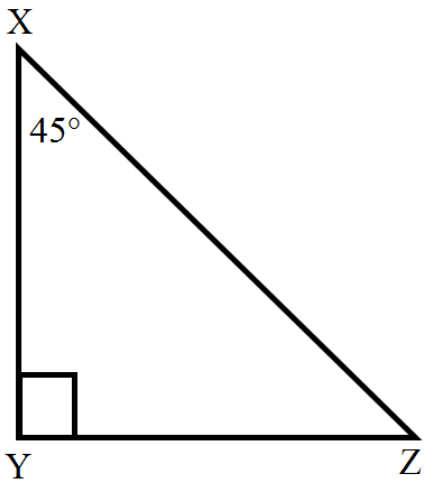
Q20. In a right $\triangle XYZ$, XZ is the hypotenuse of length 12cm and $\angle X = 45^\circ$. The area of the triangle is: **1 Mark**

A $36cm^2$ **B** $24cm^2$ **C** $72cm^2$ **D** $12cm^2$

Ans: A $36cm^2$

Solution:

In triangle XYZ,



$\cos 45^\circ = \frac{XY}{XZ}$

$\Rightarrow \frac{1}{\sqrt{2}} = \frac{XY}{12}$

$\Rightarrow XY = \frac{12}{\sqrt{2}}$cm and $\sin 45^\circ = \frac{YZ}{XZ}$

$\Rightarrow \frac{1}{\sqrt{2}} = \frac{YZ}{12}$

$\Rightarrow YZ = \frac{12}{\sqrt{2}}$cm

$\therefore$ ar ($\triangle XYZ$)

$= \frac{1}{2} \times \frac{12}{\sqrt{2}} \times \frac{12}{\sqrt{2}}$

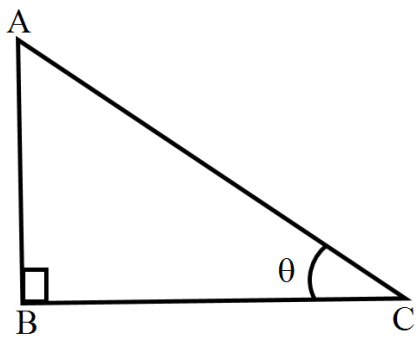
$= 36cm^2$

Q21. The angle of elevation of the sun when the shadow of a pole 'h' metres high is $\frac{h}{\sqrt{3}}$metres long is: **1 Mark**

A 60° **B** None of these **C** 30° **D** 45°

Ans: A 60°

Solution:



Given: Height of the pole = Ab = hmeters And the length of the shadow of the pole = BC $= \frac{h}{\sqrt{3}}$meters.

$\Rightarrow \tan\theta = \frac{h}{\frac{h}{\sqrt{3}}}$

$\Rightarrow \tan\theta = \sqrt{3}$

$\Rightarrow \tan\theta = \tan 60^\circ$

$\Rightarrow \theta = 60^\circ$.

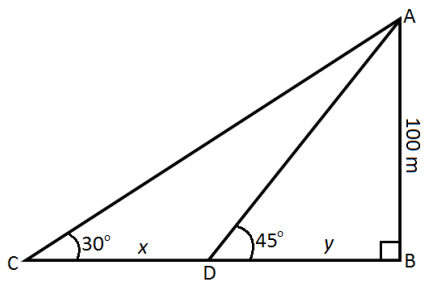
Q22. The height of a tower is 100m. When the angle of elevation of the sun changes from 30° to 45°, the shadow of the tower becomes x metres less. The value of x is: **1 Mark**

A 100m **B** $100\sqrt{3}$m **C** $100(\sqrt{3}-1)$m **D** $\frac{100}{3}$m

Ans: C $100(\sqrt{3}-1)$m

Solution: Let AB be tower and AB = 100m and angles of elevation of A at C and D are 30° and 45° respectively and CD = x

Let BD = y



Now in right △ADB,

$\tan\theta = \frac{\text{Perpendicular}}{\text{Base}} = \frac{AB}{DB}$

$\tan 45^\circ = \frac{100}{y} \Rightarrow 1 = \frac{100}{y}$

$\Rightarrow y = 100 \ldots . (i)$

Similarly in right △ACB,

$\tan 30^\circ = \frac{AB}{CB}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{100}{y+x} = \frac{100}{100+x}$

$\Rightarrow 100 + x = 100\sqrt{3}$

$\Rightarrow x = 100\sqrt{3} - 100$

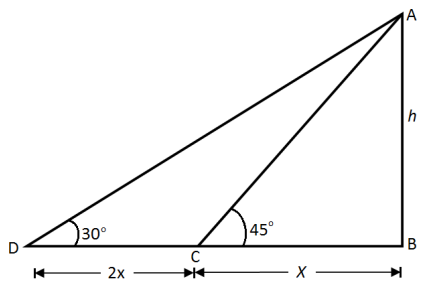
$= 100(\sqrt{3}-1)$m???????

Q23. The length of the shadow of a tower standing on level ground is found to be 2x metres longer when the sun's elevation is 30°than when it was 45°. The height of the tower in metres is: **1 Mark**

A $(\sqrt{3}+1)x$ **B** $(\sqrt{3}-1)x$ **C** $2\sqrt{3}x$ **D** $3\sqrt{2}x$

Ans: A $(\sqrt{3}+1)x$

Solution: Let h be the height of tower AB.



Given that: angle of elevation of sun are $\angle D = 30^\circ$ and $\angle C = 45^\circ$.

Then Distance CD = 2x and we assume BC = X

Here, we have to find the height of tower.

So we use trigonometric ratios.

In a triangle ABC,

$\Rightarrow \tan C = \frac{AB}{BC}$

$\Rightarrow \tan 45^\circ = \frac{AB}{BC}$

$\Rightarrow 1 = \frac{h}{X}$

$\Rightarrow X = h$

Again in a triangle ABD,

$\Rightarrow \tan D = \frac{AB}{BC+CD}$

$\Rightarrow \tan 30^\circ = \frac{h}{X+2x}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{h+2x}$ [X = h]

$\Rightarrow \sqrt{3}h = h + 2x$

$h(\sqrt{3} - 1) = 2x$

$\Rightarrow h = \frac{2x}{\sqrt{3}-1}$

$\Rightarrow h = \frac{2x}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1}$

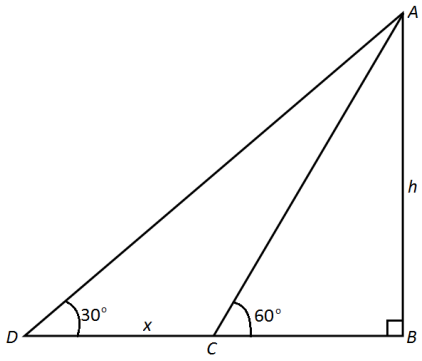
$\Rightarrow h = x(\sqrt{3} + 1)$

Q24. It is found that on walking x meters towards a chimney in a horizontal line through its base, the elevation of its top changes from 30° to 60°. The height of the chimney is: **1 Mark**

A $3\sqrt{2}x$ **B** $2\sqrt{3}x$ **C** $\frac{\sqrt{3}}{2}x$ **D** $\frac{2}{\sqrt{3}}x$

Ans: C $\frac{\sqrt{3}}{2}x$

Solution: In the figure, AB is chimney and CB and DB are its shadow



$\tan 60° = \frac{AB}{BC} = \frac{h}{BC}$

$\Rightarrow \sqrt{3} = \frac{h}{BC}$

$\Rightarrow BC = \frac{h}{\sqrt{3}}$ . . . . . (i)

and $\tan 30° = \frac{h}{DB} = \frac{h}{DB+BC}$

$\frac{1}{\sqrt{3}} = \frac{h}{x+BC}$

$x+BC = h\sqrt{3}$

$\Rightarrow BC = h\sqrt{3} - x$ . . . . . (ii)

From (i) and (ii)

$\frac{h}{\sqrt{3}} = h\sqrt{3} - x$

$\Rightarrow \frac{h}{\sqrt{3}} - h\sqrt{3} = -x$

$x = h\sqrt{3} - \frac{h}{\sqrt{3}} = h\left(\sqrt{3} - \frac{1}{\sqrt{3}}\right)$

$x = h\frac{3-1}{\sqrt{3}} \Rightarrow x = \frac{2h}{\sqrt{3}}$

$\therefore h = \frac{\sqrt{3}}{2}x$

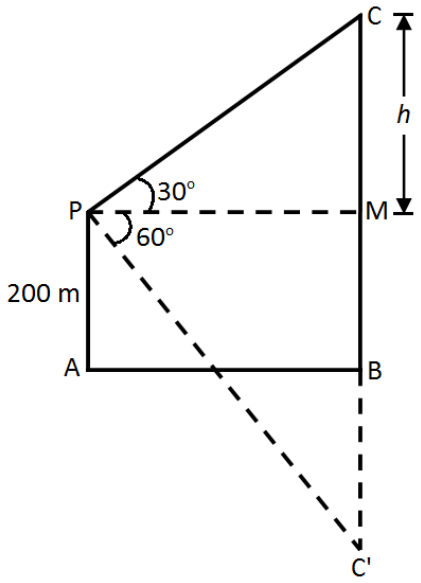
Q25. If the angle of elevation of a cloud from a point 200m above a lake is 30° and the angle of depression of its reflection in the lake is 60°, then the height of the cloud above the lake is: **1 Mark**

A 200m **B** 500m **C** 30m **D** 400m

Ans: D 400m

Solution: Let AB be the surface of the lake and P be the point of observation. So AP = 60m.

The given situation can be represented as,



Here, C is the position of the cloud and C' is the reflection in the lake. Then CB = C'B.

Let PM be the perpendicular from P on CB. Then $\angle CPM = 30^\circ$ and $\angle C'PM = 60^\circ$.

Let CM = h, PM = x, then CB = h + 200 and C'B = h + 200

Here, we have to find the height of cloud.

So we use trigonometric ratios.

In $\triangle CMP$,

$\Rightarrow \tan 30^\circ = \frac{CM}{PM}$

$\Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{x}$

$\Rightarrow x = \sqrt{3}h$

Again in $\triangle PMC'$,

$\Rightarrow \tan 60^\circ = \frac{C'M}{PM}$

$\Rightarrow \sqrt{3} = \frac{C'B + BM}{PM}$

$\Rightarrow \sqrt{3} = \frac{h + 200 + 200}{x}$

$\Rightarrow \sqrt{3}x = h + 400$

Put, $x = \sqrt{3}h$

? $3h = h + 400$

? $2h = 400$

? $h = 200$

Now,

? CB = h + 200

? CB = 200 + 200

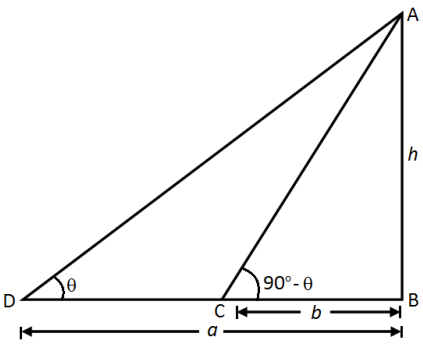
? CB = 400m

Q26. If the angles of elevation of the top of a tower from two points distant a and b from the base and in the same straight line with it are complementary, then the height of the tower is: **1 Mark**

A ab **B** $\sqrt{ab}$ **C** $\frac{a}{b}$ **D** $\sqrt{\frac{a}{b}}$

Ans: B $\sqrt{ab}$

Solution: Let h be the height of tower AB.



Given that: angle of elevation of top of the tower are $\angle D = \theta$ and $\angle C = 90^\circ - \theta$.

Distance BC = b and BD = a

Here, we have to find the height of tower.

So we use trigonometric ratios.

In a triangle ABC,

$\Rightarrow \tan C = \frac{AB}{BC}$

$\Rightarrow \tan(90^\circ - \theta) = \frac{h}{b}$

$\Rightarrow \cot\theta = \frac{h}{b}$

Again in a triangle ABD,

$\tan D = \frac{AB}{BD}$

$\Rightarrow \tan\theta = \frac{h}{a}$

$\Rightarrow \frac{1}{\cot\theta} = \frac{h}{a}$ $\cot\theta = \frac{h}{b}$

$\Rightarrow \frac{b}{h} = \frac{h}{a}$

$\Rightarrow h^2 = ab$

$\Rightarrow h = \sqrt{ab}$

Q27. The angle of elevation of a cloud from a point h metre above a lake is θ. The angle of depression of its reflection in the lake is 45°. The height of the cloud is: **1 Mark**

A $h\tan(45^\circ + \theta)$ **B** $h\cot(45^\circ - \theta)$ **C** $h\tan(45^\circ - \theta)$ **D** $h\cot(45^\circ + \theta)$

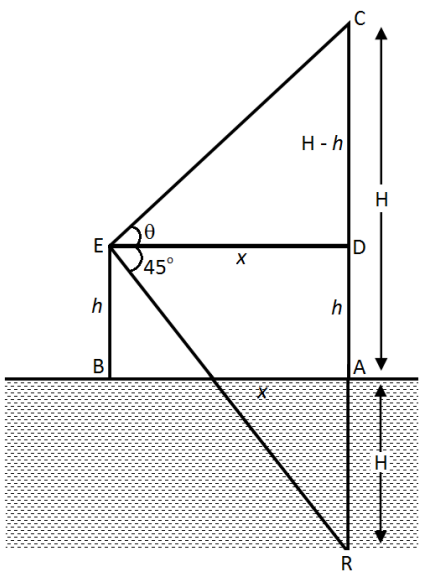
Ans: A $h\tan(45^\circ + \theta)$

Solution: Let C is the cloud and R is its reflection in the lake

From the lake, '7'm aboves it, E is point

where angle of elevation of C is θ

and angle of depression of reflection is 45°



Let height of cloud C is H

$\therefore$ CA = H = AR

AD = BE = h

CD = H - h and BR = H + h

Now in right △CED,

$\tan\theta = \frac{CD}{ED} = \frac{H-h}{x}$

$\Rightarrow x = \frac{H-h}{\tan\theta}$ . . . . . (i)

and in △EDR,

$\tan 45^\circ = \frac{DR}{ED} = \frac{H+h}{x}$

$\Rightarrow x = \frac{H+h}{\tan 45^\circ} = \frac{H+h}{1}$

$\Rightarrow x = H + h$ . . . . . (i)

From (i) and (ii)

$\frac{H-h}{\tan\theta} = H + h$

$\Rightarrow H - h = \tan\theta(H + h)$

$\Rightarrow H - h = H\tan\theta + h\tan\theta$

$\Rightarrow H - H\tan\theta = h + h\tan\theta$

$\Rightarrow H(1 - \tan\theta) = h(1 + \tan\theta)$

$\Rightarrow H = \frac{h(1+\tan\theta)}{1-\tan\theta}$

$\therefore$ Height of the cloud $= \frac{h(1+\tan\theta)}{1-\tan\theta}$

$= h\tan(45^\circ + \theta)$

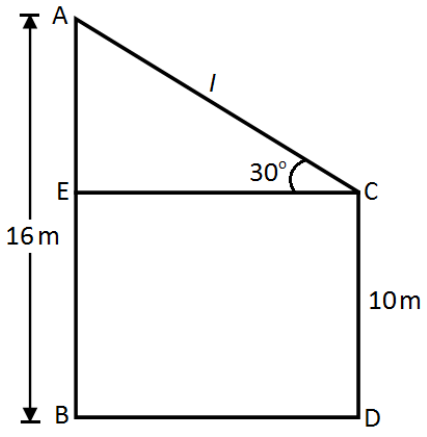
Q28. The tops of two poles of height 16m and 10m are connected by a wire of length l metres. If the wire makes an angle of 30° with the horizontal, then l = **1 Mark**

A 26 **B** 16 **C** 12 **D** 10

Ans: C 12

Solution: Let AB and CD be the poles such that AB = 16m and CD = 10m.

The given information can be represented as,



Here, AC is the length of wire which is l.

Also, AE = AB - BE = 16m - 10m = 6m

We have to find the length of wire l.

So we use trigonometric ratios.

In triangle ACE,

$\sin C = \frac{AE}{EC}$

$\Rightarrow \sin 30° = \frac{6}{l}$

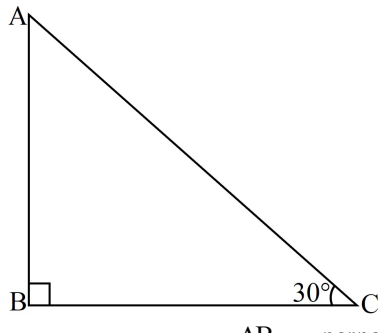
$\Rightarrow \frac{1}{2} = \frac{6}{l}$

$\Rightarrow l = 12m$

Q29. Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). **1 Mark**

Mark the correct choice as:

Assertion: In the figure, if BC = 20m, then height AB is 11.56m.



Reason: $\tan\theta = \frac{AB}{BC} = \frac{\text{perpendicular}}{\text{base}}$ where θ is the $\angle ACB$

1. Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
2. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
3. Assertion (A) is true but reason (R) is false.
4. Assertion (A) is false but reason (R) is true.

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Ans: A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Solution:

Both the assertion and reason are correct, reason is the correct explanation of the assertion.

$\tan 30° = \frac{AB}{BC} = \frac{AB}{20}$

$AB = \frac{1}{\sqrt{3}} \times 20 = \frac{20}{1.73} = 11.56m$

Q30. Assertion: If the length of shadow of a vertical pole is equal to its height, then the angle of elevation of the sun is 45° **1 Mark**

Reason: According to pythagoras theorem, $h^2 = l^2 + b^2$ where h = hypotenuse, l = length and b = base

A Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

C Assertion (A) is true but reason (R) is false.

D Assertion (A) is false but reason (R) is true.

Ans: B Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).

2. Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).