Aptitude - Height & Distance Online Quiz

Following quiz provides Multiple Choice Questions (MCQs) related to **Height & Distance**. You will have to read all the given answers and click over the correct answer. If you are not sure about the answer then you can check the answer using **Show Answer** button. You can use **Next Quiz** button to check new set of questions in the quiz.

Q 1 - A man observes the elevation of a balloon to be 45° at a point A .He then walks towards the balloon and at a certain place B finds the elevation to be 60°. He further walks in the direction of the balloon and finds it to be directly over him at a height of 450 m. Distance travelled from A to B is

A - 300√3 m

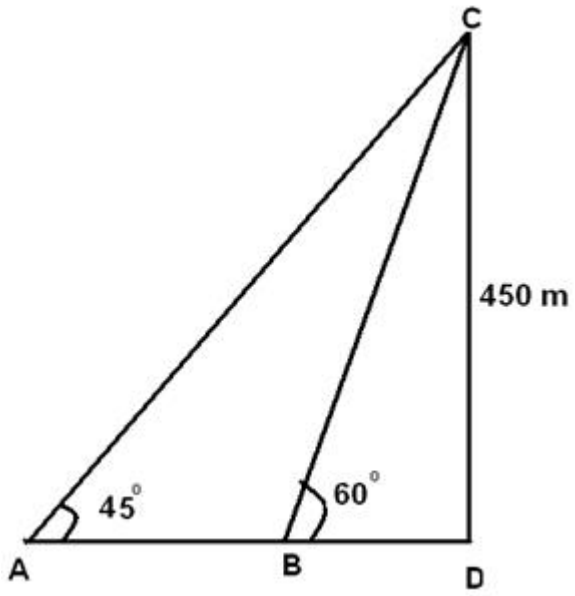
B - 200√3 m

C - 100√3 m

D - 450√3 m

Answer : A

Explanation



450/BD= tan (60) =>BD =450/√3
450/AD= tan (30) =>AD= 450√3
AD =BD +AB
=>AB=AD-BD= 450√3-450/√3=(450x3-450)/√3=300√3m

Hide Answer

Q 2 - When the sun's altitude changes from 45° to 60°, the length of the shadow of a tower decreases by 45m. What is the height of the tower?

A - (45√3)/(√3-1)

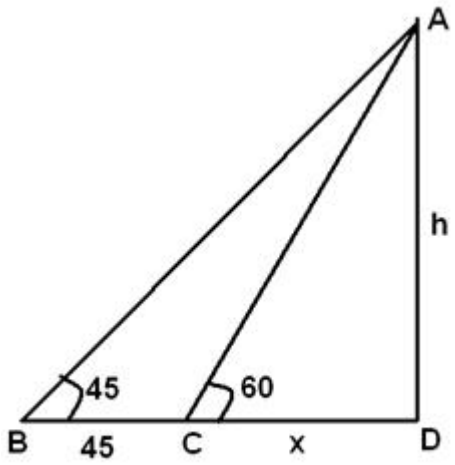
B - (45√3)/(√3+1)

C - (45+√3)/(√3-1)

D - (45-√3)/(√3-1)

Answer : A

Explanation



Let AD be the tower, BD be the initial shadow and CD be the final shadow.
Given that BC = 45 m, ABD = 45°, ACD = 60°,
Let CD = x, AD = h
From the right CDA, tan60=h/x
From the right BDA, tan45=(45+x)/h=>h=45+x
=>h=45+h/√3

=>h(1-1/√3)=45
=>h=45/(1-1/√3)=(45√3)/(√3-1)

Hide Answer

Q 3 - From the top of mast head of height 210 meters of a ship, a boat is observed at an angle of depression of 30° then the distance between them is

A - 210√3

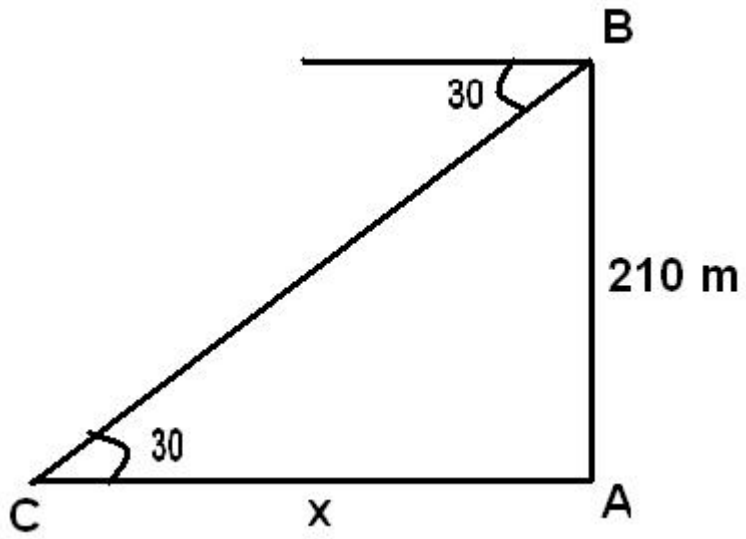
B - 210/√3

C - 70√3

D - 105√3

Answer : A

Explanation

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From the right angled triangle CAB
Tan(30) =210/X
=>X=210/Tan(30)=210/(1/√3)=210√3
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Show Answer

Q 4 - The shadow of a building is 10 m long when the point of rise of the sun is 60°. Discover the building's stature.

A - 16.32m

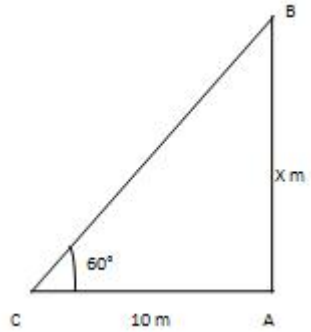
B - 17.32 m

C - 18.32 m

D - 19.32m

Answer : B

Explanation



Let AB be the building and AC be its shadow.
Then, AC=20m and ∠ACB=60°.Let AB= x m.
Presently AB/AC=tan 60°=√3=>x/10=√3
=>x=10√3m= (10*1.732) m=17.32m.
∴ Height of the building is 17.32m.

Hide Answer

Q 5 - Two men are inverse sides of a tower. They gauge the edge of the rise of the highest point of the tower as 30° and 45° respectively. On the off chance that the tallness of the tower is 50 m, discover the separation between the two men. (Take √3=1.732)

A - 135.5m

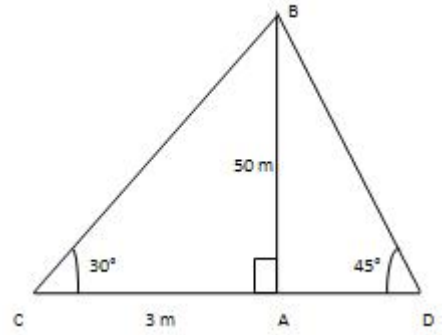
B - 136.5 m

C - 137.5 m

D - 138.5m

Answer : B

Explanation



Let AB be the tower and let C and D be the two's positions men.
At that point ∠ACB=30°,∠ADB= 45°and AB= 50 m
AC/AB = Cot30°=√3 => AC/50 = √3
=>AC=50√3m
AD/AB=cot 45°=1 => AD/50=1
=> AD=50M.
Separation between the two men =CD= (AC+AD)
= (50√3+50) m=50(√3+1)
=50(1.73+1)m=(50*2.73)m=136.5m.

Hide Answer

Q 6 - The point of height of a tower from a separation 50 m from its foot is 30. The tower's tallness is:

A - 50√3m

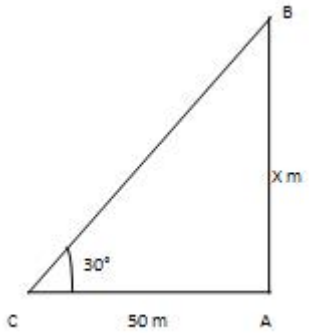
B - 50/√3m

C - 23√3m

D - 100m/√3

Answer : B

Explanation



Let AB be the tower and AC be the even line such that AC=50 m and ∠ACB=30°.
AB/AC=tan 30°=1/√3
=>x/50 = 1/√3
> x=50*1/√3m= 50/√3m.
∴ Height of the tower=50/√3m.

Show Answer

Q 7 - From The highest point of a bluff 90 m high, the edges of Misery of the top and base of a tower are seen to be 30° and 60°. What is the tower's tallness is?

A - 30 m

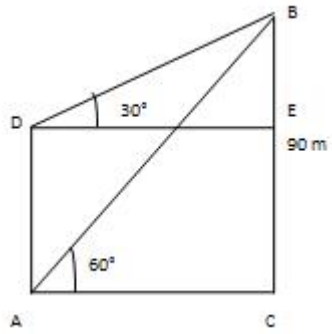
B - 45 m

C - 60 m

D - 75 m

Answer : C

Explanation



Let AB be the precipice and CD be the tower. Draw DE || CA.
Then, ∠BDE=30°, ∠BCA=60°and AB= 90m.
From right △CAB, we have
CA/AB=cost60°=1/√3 => CA/90=1/√3

=>CA=(90*1/√3* √3/√3)
=30 √3m.
∴ DE =CE=30/√3m.
From right ?DEB, we have
BE/DE= tan30°=1/√3 => BE/30 √3=1 √3
=>BE= (30 √3*1 √3) =30m.
∴ CD=AE= (AB-BE) = (90-30) m=60m.
Hence, the tower's stature is 60m.

Show Answer

Q 8 - On the level plane, there is a vertical tower with a flagpole on its top. At a point 9m far from the tower, the edges of rise of the top and Base of the flagpole are 60°and 30°respectively.The flagpole's tallness is:

A - 6 √3 m

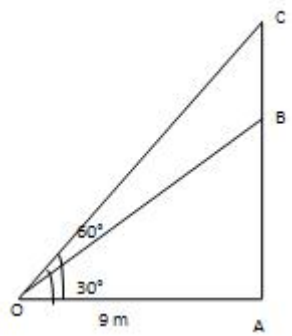
B - 5 √3m

C - 6 √2m

D - 4m

Answer : A

Explanation



Let AB be the tower and BC be the flag pole and let O be the point of observation.
Then, A=9m, ∠AOB=30°and ∠AOC=60°
AB/OA=tan30°=1 ∠ =>AB/9=1∠
=>AB=(9*1/ √3* √3/√3)= 3 √3m.
AC/AO=tan60°=√3 =>AC/9= √3 =>AC= 9√3m.
∴BC= (AC-AB) = (9 √3-3 √3) m=6 √3m.
∴ Height of the flagpole is 6 √m.

Hide Answer