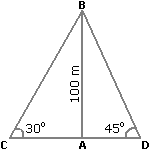
# Two ships are sailing in the sea on the two sides of a lighthouse. The angle of elevation of the top of the lighthouse is observed from the ships are 30º and 45º respectively. If the lighthouse is 100 m high, the distance between the two ships is:

173 m;200 m;273 m;300 m

273 m

Let AB be the lighthouse and C and D be the positions of the ships.



Then, AB = 100 m, http://www.indiabix.com/_files/images/aptitude/1-sym-ang.gifACB = 30º and http://www.indiabix.com/_files/images/aptitude/1-sym-ang.gifADB = 45º.

|  |  |  |  |
| --- | --- | --- | --- |
| AB | = tan 30º = | 1 | http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif     AC = AB x 3 = 1003 m. |
| AC | 3 |

|  |  |
| --- | --- |
| AB | = tan 45º = 1     http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif     AD = AB = 100 m. |
| AD |

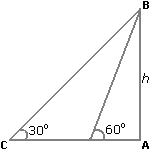
|  |  |
| --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif CD = (AC + AD) | = (1003 + 100) m |
|  | = 100(3 + 1) |
|  | = (100 x 2.73) m |
|  | = 273 m. |

# A man standing at a point P is watching the top of a tower, which makes an angle of elevation of 30º with the man's eye. The man walks some distance towards the tower to watch its top and the angle of the elevation becomes 60º. What is the distance between the base of the tower and the point P?

43 units;8 units;12 units;Data inadequate

Data inadequate

One of AB, AD and CD must have given.



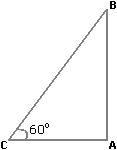
So, the data is inadequate.

# The angle of elevation of a ladder leaning against a wall is 60º and the foot of the ladder is 4.6 m away from the wall. The length of the ladder is:

2.3 m;4.6 m;7.8 m;9.2 m

9.2 m

Let AB be the wall and BC be the ladder.



Then, http://www.indiabix.com/_files/images/aptitude/1-sym-ang.gifACB = 60º and AC = 4.6 m.

|  |  |  |
| --- | --- | --- |
| AC | = cos 60º = | 1 |
| BC | 2 |

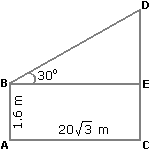
|  |  |
| --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif BC | = 2 x AC |
|  | = (2 x 4.6) m |
|  | = 9.2 m. |
|  |  |

# An observer 1.6 m tall is 203 away from a tower. The angle of elevation from his eye to the top of the tower is 30º. The heights of the tower is:

21.6 m;23.2 m;24.72 m;None of these

21.6 m

Let AB be the observer and CD be the tower.



Draw BE http://www.indiabix.com/_files/images/aptitude/1-sym-plr.gif CD.

Then, CE = AB = 1.6 m,

      BE = AC = 203 m.

|  |  |  |
| --- | --- | --- |
| DE | = tan 30º = | 1 |
| BE | 3 |

|  |  |  |
| --- | --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif DE = | 203 | m = 20 m. |
| 3 |

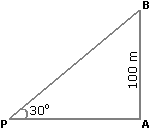
http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif CD = CE + DE = (1.6 + 20) m = 21.6 m.

# From a point P on a level ground, the angle of elevation of the top tower is 30º. If the tower is 100 m high, the distance of point P from the foot of the tower is:

149 m;156 m;173 m;200 m

173 m

Let AB be the tower.



Then, http://www.indiabix.com/_files/images/aptitude/1-sym-ang.gifAPB = 30º and AB = 100 m.

|  |  |  |
| --- | --- | --- |
| AB | = tan 30º = | 1 |
| AP | 3 |

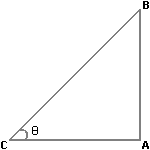
|  |  |
| --- | --- |
| http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif AP | = (AB x 3) m |
|  | = 1003 m |
|  | = (100 x 1.73) m |
|  | = 173 m. |

# The angle of elevation of the sun, when the length of the shadow of a tree 3 times the height of the tree, is:

30º; 45º; 60º; 90º

30º

Let AB be the tree and AC be its shadow.



Let http://www.indiabix.com/_files/images/aptitude/1-sym-ang.gifACB = http://www.indiabix.com/_files/images/aptitude/1-sym-tta.gif.

|  |  |  |  |
| --- | --- | --- | --- |
| Then, | AC | = | 3     http://www.indiabix.com/_files/images/aptitude/1-sym-imp.gif     cot http://www.indiabix.com/_files/images/aptitude/1-sym-tta.gif = 3 |
| AB |

http://www.indiabix.com/_files/images/aptitude/1-sym-tfr.gif http://www.indiabix.com/_files/images/aptitude/1-sym-tta.gif = 30º.