Practice Challenge - Objective

Subject: Mathematics

Topic : Some Applications of Trignometry Exam Prep 1

Class: X

1. The value of $\cos 30^\circ$ is

   A. $\frac{1}{2}$

   B. $\sqrt{3}$

   C. $\frac{\sqrt{3}}{2}$

   D. $\frac{1}{\sqrt{2}}$

2. The height of a tree is $10\sqrt{3}$ m, if a boy looks at the top of the tree with an angle of elevation of 30°, find the distance between the boy and the tree.

   A. 10 m

   B. $10\sqrt{3}$ m

   C. 30 m

   D. 20 m

3. The shadow of a tower standing on a level ground is found to be 60 m longer when the Sun's altitude is 30° than when it is 60°. Find the height of the tower.

   A. 30 m

   B. 20 m

   C. $30\sqrt{3}$ m

   D. $20\sqrt{3}$ m

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4. The angles of depression of the top and the bottom of a 10 m tall building from the top of a multi-storeyed building are 30° and 45°, respectively. Find the height of the multi-storeyed building.

   A. 10 m

   B. 15 m

   C. 5($\sqrt{3}$ + 3) m

   D. 5 m

5. The value of $tan58^\circ\ tan32^\circ\ tan57^\circ\ tan33^\circ$ is

   A. 0

   B. 1

   C. 2

   D. 3

6. From the top of a lighthouse H m tall, a person observes the angle of depression of a boat to be 60°. Another person who is $\frac{H}{3}$ m from the top of a lighthouse observes the angle of depression of another boat directly behind the first boat to be 45°. Find the distance between the two boats.

   (Take $\sqrt{3}$ = 1.7)

   A. $\frac{H}{10}$

   B. $\frac{H}{3}(2-\sqrt{3})$

   C. 0.6 H

   D. 1.7H

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7. The tops of two poles of height 14 m and 20 m are connected by a wire which makes an angle of 30° with the horizontal. What is the length of the wire?

   A. 6 m

   B. 10 m

   C. 8 m

   D. 12 m

8. The ratio of the length of a rod and its shadow is $1 : \sqrt{3}$. The angle of elevation of the sun is _____ .

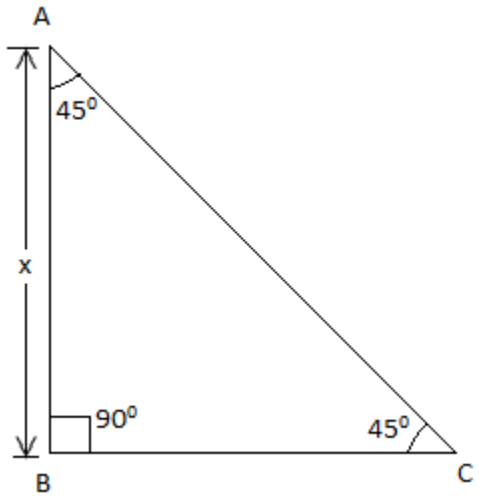
   A. 30°

   B. 45°

   C. 60°

   D. 90°

9. In the given figure, ABC is an isosceles right angle triangle, right angled at B. The ratio of the sides AB: BC : AC is _____.



A. $1 : 1 : \sqrt{2}$

B. $\sqrt{2} : 1 : 1$

C. $\sqrt{3} : 2 : 1$

D. $1 : 2 : \sqrt{3}$

10. What is the line drawn from the eye of the observer to the the object viewed by the observer?

A. Line of sight

B. Vertical line

C. Transversal line

D. Horizontal line