

CHAPTER-9 | SOME APPLICATIONS OF TRIGONOMETRY

QUIZ
PART-02

1. A circus artist climbs a 20 m rope at a 30° angle with the ground. What is the height of the pole?
A. 10 m
B. 20 m
C. $20 \sin 30^\circ$
D. $20 \cos 30^\circ$ (C)

Explanation: Height = $20 \sin 30^\circ = 10$ m.

2. A tree breaks, and the top touches the ground at 30° . The distance from the foot of the tree to the top is 8 m. Find the height of the tree.
A. 8 m
B. $8 \times \tan 30^\circ$
C. $8 \times \cot 30^\circ$
D. $8 \times \sin 30^\circ$ (B)

Explanation: Height = $8 \times \tan 30^\circ = 8 \times 1/\sqrt{3}$.

3. For a slide of height 1.5 m inclined at 30° , what is the length of the slide?
A. $1.5 / \sin 30^\circ$
B. $1.5 \times \sin 30^\circ$
C. $1.5 \times \cos 30^\circ$
D. $1.5 \times \tan 30^\circ$ (A)

Explanation: Length = $1.5 / \sin 30^\circ = 3$ m.

4. For a slide inclined at 60° with a height of 3 m, what is the length?
A. $3 / \sin 60^\circ$
B. $3 \times \cos 60^\circ$
C. $3 \times \sin 60^\circ$
D. $3 \times \tan 60^\circ$ (A)

Explanation: Length = $3 / \sin 60^\circ = 2\sqrt{3}$ m.

5. The angle of elevation to the top of a tower from a point 30 m away is 30° . What is the height of the tower?
A. $30 \times \tan 30^\circ$
B. $30 \times \cot 30^\circ$
C. $30 \times \sin 30^\circ$
D. $30 \times \cos 30^\circ$ (A)

Explanation: Height = $30 \times \tan 30^\circ = 30 \times 1/\sqrt{3}$.

6. A kite is flying at 60 m above the ground with the string inclined at 60° . What is the length of the string?
A. 60
B. $60 / \sin 60^\circ$
C. $60 / \cos 60^\circ$
D. $60 / \tan 60^\circ$ (B)

Explanation: Length = $60 / \sin 60^\circ = 120$ m.

7. For a slide at a height of 3 m inclined at 60° , what is the length of the slide?
A. $3 / \sin 60^\circ$
B. $3 \times \sin 60^\circ$
C. $3 \times \cos 60^\circ$
D. $3 \times \tan 60^\circ$ (A)

Explanation: Length = $3 / \sin 60^\circ = 2\sqrt{3}$ m.

8. A flagstaff is hoisted on a building. The angle of elevation from a point on the ground is 45° . The height of the building is 10 m. What is the height of the flagstaff?
A. 10
B. $10 \times \tan 45^\circ$
C. $10 \times \cot 45^\circ$
D. $10 \times \sin 45^\circ$ (B)

Explanation: Height = 10 m since $\tan 45^\circ = 1$.

9. A kite is flying at 60 m, and the string is tied to the ground. The angle of elevation is 60° . What is the length of the string?
A. 60
B. $60 / \sin 60^\circ$
C. $60 / \cos 60^\circ$
D. $60 / \tan 60^\circ$ (B)

Explanation: Length = $60 / \sin 60^\circ = 120$ m.

10. The shadow of a tower is 40 m longer when the Sun's altitude is 30° than when it is 60° . Find the height of the tower.
A. 30 m
B. 40 m
C. 50 m
D. 60 m (B)

Explanation: Using the difference in shadow lengths, the height of the tower is 40 m.