Unit 8: Application of Trigonometry

SSC-II Mathematics (Federal Board, National Book Foundation) | 37 MCQs

Choose the correct answer. The correct option is shown in **bold**. Each question carries one mark.

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1. sin(180° − θ) is equal to

A. cos θ
B. −cos θ
C. sin θ
D. −sin θ

2. cos(180° − θ) is equal to

A. −cos θ
B. cos θ
C. −sin θ
D. sin θ

3. The value of sin 150° is

A. −1/2
B. 1/2
C. −√3/2
D. √3/2

4. The value of cos 120° is

A. √3/2
B. −√3/2
C. 1/2
D. −1/2

5. The value of sin 120° is

A. 1/2
B. √3/2
C. −1/2
D. −√3/2

6. The value of cos 150° is

A. √3/2
B. −1/2
C. −√3/2
D. 1/2

7. The value of sin 135° is

A. −1/√2
B. √3/2
C. 1
D. 1/√2

8. The value of cos 135° is

A. −1/√2
B. 1/√2
C. −1
D. 0

9. The value of tan 135° is

A. 1
B. 0
C. √3
D. −1

10. The value of cos 180° is

A. 1
B. −1
C. undefined
D. 0

11. In a triangle ABC, the law of sines states that

A. a/cos A = b/cos B = c/cos C
B. sin A/a = b/sin B
C. a/sin A = b/sin B = c/sin C
D. a sin A = b sin B = c sin C

12. In a triangle ABC, the law of cosines states that

A. $a^2 = b^2 + c^2 - 2bc \cos A$ B. $a = b + c - 2bc \cos A$

C. $a^2 = b^2 + c^2 + 2bc \cos A$ D. $a^2 = b^2 - c^2 - 2bc \cos A$

13. In a triangle ABC, cos A equals

A. $(b^2 - c^2 - a^2)/(2bc)$ B. $(b^2 + c^2 + a^2)/(2bc)$

C. $(a^2 + b^2 - c^2)/(2bc)$ **D. $(b^2 + c^2 - a^2)/(2bc)$**

14. In triangle ABC, if b = 3, c = 4 and A = 90°, then a equals

A. 1 **B. 5**

C. 25 D. 7

15. In triangle ABC, if b = c = 4 and A = 60°, then a equals

A. 8 B. 16

C. 4 D. 2

16. In triangle ABC, if b = c = 2 and A = 120°, then a equals

A. $2\sqrt{3}$ B. 2

C. $\sqrt{3}$ D. 4

17. In triangle ABC, if a = 6, b = 8 and C = 90°, then c equals

A. 14 B. 100

C. 2 **D. 10**

18. In triangle ABC, if a = 10, A = 30° and B = 90°, then b equals

A. 5 **B. 20**

C. $10\sqrt{3}$ D. 10

19. In a triangle, if A = 50° and B = 60°, then C equals

A. 70° B. 80°

C. 60° D. 110°

20. The area of triangle ABC in terms of two sides and the included angle is

A. ½ ab tan C B. ab sin C

C. ½ ab sin C D. ½ ab cos C

21. The area of a triangle with a = 4, b = 6 and C = 30° is

A. 24 square units B. 12 square units

C. 3 square units **D. 6 square units**

22. The area of a triangle with two sides 10 and 10 and the included angle 90° is

A. 50 square units B. 25 square units

C. 10 square units D. 100 square units

23. The area of a triangle with sides 3, 4 and 5 is

A. 7.5 square units B. 10 square units

C. 6 square units D. 12 square units

24. The law of sines is most useful when we are given

A. three sides
B. two angles and one side
C. only one angle
D. two sides and the included angle

25. The law of cosines is used to find the third side when we are given

A. two angles and one side
B. three angles
C. only one side
D. two sides and the included angle

26. The law of cosines is used to find an angle when we are given

A. one angle only
B. one side only
C. all three sides
D. all three angles

27. The angle of elevation is the angle between the horizontal line and the line of sight when the object is

A. above the horizontal
B. on the horizontal
C. below the horizontal
D. behind the observer

28. The angle of depression is the angle between the horizontal line and the line of sight when the object is

A. at the observer's eye level
B. below the horizontal
C. directly overhead
D. above the horizontal

29. The angle of elevation of A from B is equal to the angle of depression of

A. B from A
B. A from A
C. A from the ground
D. B from the ground

30. A tower is observed from a point 20 m from its base at an angle of elevation of 45°. The height of the tower is

A. 40 m
B. 10 m
C. 20 m
D. $20\sqrt{2}$ m

31. A pole of height 10 m casts a shadow of length $10\sqrt{3}$ m. The angle of elevation of the sun is

A. 90°
B. 60°
C. 45°
D. 30°

32. From a point 10 m from the foot of a tower, the angle of elevation of its top is 60°. The height of the tower is

A. $5\sqrt{3}$ m
B. $10\sqrt{3}$ m
C. 10 m
D. 20 m

33. A ladder 10 m long makes an angle of 60° with the ground. The height it reaches on the wall is

A. 10 m
B. $10\sqrt{3}$ m
C. $5\sqrt{3}$ m
D. 5 m

34. A ladder 10 m long makes an angle of 60° with the ground. The distance of its foot from the wall is

A. 10 m
B. $5\sqrt{3}$ m
C. $10\sqrt{3}$ m
D. 5 m

35. The length of the diagonal of a cuboid with dimensions 3 cm, 4 cm and 12 cm is

A. 13 cm
B. 15 cm
C. 5 cm
D. 19 cm

36. The diagonal of a cube of side 1 unit has length

A. √2 units
B. √3 units
C. 1 unit
D. 3 units

37. In an isosceles triangle with equal sides b = c, the angles B and C are

A. each 90°
B. complementary
C. equal
D. supplementary