Grade 10 Mathematics Revision: Trigonometry and Radian Measure

Mathematics · Answer Key · 20 Questions

1. What is the period of sin(bx)?

A) 2?
B) 2?/b
C) ?
D) ?/b

2. What is the amplitude of the function g(x) = -3cos(x) + 5?

A) 3
B) 5
C) -3
D) 8

3. Simplify the expression: sin²? + cos²? + tan²?.

A) sec²?
B) csc²?
C) tan²?
D) 1

4. If sec? = 2 and 270° < ? < 360°, find ?.

A) 300°
B) 330°
C) 270°
D) 360°

5. Solve for x in the interval [0, 2?]: 2sin(x) - 1 = 0.

A) ?/6, 5?/6
B) ?/3, 2?/3
C) ?/4, 3?/4
D) ?/6, 7?/6

6. Which of the following is an even function?

A) sin(x)
B) cos(x)
C) tan(x)
D) csc(x)

7. What is the domain of the function f(x) = tan(x)?

A) {x ? R | x != n?, n ? Z}
B) {x ? R | x != ?/2 + n?, n ? Z}
C) {x ? R | x != 2n?, n ? Z}
D) {x ? R}

8. Find the exact value of sin(210°).

A) -1/2
B) 1/2
C) -?3/2
D) ?3/2

9. Convert 150° to radians.

A) 5?/6
B) 6?/5
C) 3?/4
D) 4?/3

10. Convert 2?/3 radians to degrees.

A) 120°
B) 60°
C) 150°
D) 240°

11. A circle has a radius of 10 cm. Find the length of the arc intercepted by a central angle of 2.5 radians.

A) 25 cm
B) 12.5 cm
C) 20 cm
D) 5 cm

12. Find the area of a sector with a radius of 6 cm and a central angle of ?/4 radians.

A) 9?/2 cm²
B) 3? cm²
C) 18? cm²
D) 27?/2 cm²

13. If an arc of length 15 cm subtends a central angle of 120°, what is the radius of the circle?

A) 6.75 cm
B) 22.5 cm
C) 7.5 cm
D) 12 cm

14. Determine the linear speed (in cm/s) of a point on the edge of a wheel with radius 20 cm rotating at 3 radians per second.

A) 60 cm/s
B) 23 cm/s
C) 40 cm/s
D) 60? cm/s

15. Find the complement and supplement of ?/4 radians.

A) Complement: ?/4, Supplement: 3?/4
B) Complement: ?/2, Supplement: 3?/4
C) Complement: ?/4, Supplement: 7?/4
D) Complement: ?/2, Supplement: 7?/4

16. If ? is in standard position and the point P(-3, 4) lies on its terminal side, find sin ?.

A) 4/5
B) -3/5
C) 5/4
D) -5/3

17. If ? is in standard position and the point P(-3, 4) lies on its terminal side, find cos ?.

A) -3/5
B) 4/5
C) -5/3
D) 5/4

18. If ? is in standard position and the point P(-3, 4) lies on its terminal side, find tan ?.

A) -4/3
B) 3/4
C) -5/3
D) 5/4

19. Determine the exact value of sin(3?/4).

A) ?2/2
B) -?2/2
C) 1/2
D) -1/2

20. If cos ? = -3/5 and ? is in Quadrant III, find the value of csc ?.

A) -5/4
B) 5/4
C) -5/3
D) 3/5