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Math_Questions_0028
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1. Solve the equation on the interval [0, 2π)

$$2\cos^2 x + \sin x - 2 = 0$$

a. $\frac{\pi}{2}$, $\frac{3\pi}{2}$, $\frac{\pi}{3}$, $\frac{2\pi}{3}$

b. 0, π/ 6, $\frac{5\pi}{6}$

c. $\frac{\pi}{3}$, $\frac{2\pi}{3}$

d. $\frac{\pi}{6}$, $\frac{5\pi}{6}$

2 Solve the equation on the interval [0, 2π)

Sin 4x = $\frac{\sqrt{3}}{2}$

a. $\frac{\pi}{4}$, $\frac{5\pi}{4}$

b. 0

c. 0, $\frac{\pi}{4}$, π

d. $\frac{\pi}{12}$, $\frac{\pi}{6}$, $\frac{2\pi}{3}$, $\frac{7\pi}{12}$, $\frac{7\pi}{6}$, $\frac{13\pi}{12}$, $\frac{5\pi}{3}$, $\frac{19\pi}{12}$

3. Solve the equation on the interval $[0, 2\pi)$

$$\text{TAN X} = 3.0$$

a. 1.25, 2.82
b. 1.25, 5.03
c. 1.25, 1.89
d. 1.25, 4.39

4. Solve the equation on the interval $[0, 2\pi)$

$$\text{TAN}^2 \text{ X SIN X} = \text{TAN}^2 \text{ X}$$

a. $\frac{\pi}{2}$, π
b. 0 , $\frac{\pi}{2}$
c. 0, π
d. $\frac{\pi}{2}$, π, 2π

5. Solve the equation on the interval $[0, 2\pi)$

$$\text{SIN}^2 \text{ X} - \text{COS}^2 \text{ X} = 0$$

a. $\frac{\pi}{4}$
b. $\frac{\pi}{4}$, $\frac{\pi}{6}$
c. $\frac{\pi}{4}$, $\frac{\pi}{3}$
d. $\frac{\pi}{4}$, $\frac{3\pi}{4}$, $\frac{5\pi}{4}$, $\frac{7\pi}{4}$

6. Solve the equation on the interval $[0, 2\pi)$

$$\text{SIN X} = 0.25$$

a. 0.25, 1.82
b. 0.25, 2.89
c. 0.25, 3.39
d. 0.25, 6.03

7 Solve the equation on the interval $[0, 2\pi)$

$COS\ X = SIN\ X$

a. $\frac{\pi}{4}$, $\frac{5\pi}{4}$

b. $\frac{\pi}{4}$, $\frac{7\pi}{4}$

c. $\frac{3\pi}{4}$, $\frac{7\pi}{2}$

d. $\frac{3\pi}{4}$, $\frac{5\pi}{4}$

8. Solve the equation on the interval $[0, 2\pi)$

$COS\ 2x = \sqrt{2} - COS\ 2x$

a. 0, $\frac{2\pi}{3}$, π, $\frac{4\pi}{3}$

b. $\frac{\pi}{8}$, $\frac{7\pi}{8}$, $\frac{9\pi}{8}$, $\frac{15\pi}{8}$

c. $\frac{\pi}{4}$, $\frac{3\pi}{4}$, $\frac{5\pi}{4}$, $\frac{7\pi}{4}$

d. No Solution

9. Use substitution to determine whether the given X value is a solution of the equation.

$SIN\ X = -\frac{\sqrt{3}}{2}$, $X = \frac{4\pi}{3}$

a. YES

b. NO

10. Solve the equation on the interval $[0, 2\pi)$

$COS\ X = -0.62$

a. 0.90, 4.04

b. 2.24, 4.04

c. 2.24, 5.38

d. 0.90, 2.24

11. Use substitution to determine whether the given X value is a solution of the equation.

$$\text{SIN X} = -\frac{2\sqrt{3}}{3}, \text{ X} = \frac{4\pi}{3}$$

a. YES
b. NO

12. Solve the equation on the interval [0, 2π)

$$\text{COS } 2x = \frac{\sqrt{3}}{2}$$

a. $\frac{3\pi}{2}$
b. $\frac{\pi}{6}$, $\frac{11\pi}{6}$,
c. $\frac{\pi}{2}$
d. $\frac{\pi}{12}$, $\frac{11\pi}{12}$, $\frac{13\pi}{12}$, $\frac{23\pi}{12}$

13. Solve the equation on the interval [0, 2π)
SIN 2x - SIN x = 0

a. 0, 1.05, 3.14, 5.24
b. 0, 2.09, 3.14, 4.19
c. 1.05, 3.14 5.24
d. 0, 2.09, 4.19

14 Solve the equation on the interval [0, 2π)
TAN X + SEC X = 1

a. 0
b. No Solution
c. $\frac{\pi}{4}$
d. $\frac{5\pi}{4}$

15. Solve the equation on the interval [0, 2π)

$$COS^2 X + 2 COS X + 1 = 0$$

a. $\frac{\pi}{4}$, $\frac{7\pi}{4}$
b. π
c. $\frac{\pi}{2}$, $\frac{3\pi}{2}$
d. 2π

16. Convert the Polar Equation to a rectangular equation
R COS θ = 4

a. $y^2 + x^2 = 4$
b. y = 4
c. x = 4
d. $y^2 = 4$

17. Rectangular coordinates are given, Find the Polar coordinates
(0, -√3)

a. (-√3, 180°)
b. (√3, 90°)
c. (-√3, 90°)
d. (-√3, 270°)

18. Rectangular coordinates are given, Find the Polar coordinates
(-11, 11)

a. (11, $\frac{\pi}{4}$)
b. (11√2, $\frac{3\pi}{4}$)
c. (11, $-\frac{3\pi}{4}$)
d. (11√2, $-\frac{3\pi}{4}$)

19. Polar coordinates are given, find rectangular coordinates

$(-3, -135°)$

a. $\left(-\frac{3\sqrt{2}}{2}, \frac{3\sqrt{2}}{2}\right)$

b. $\left(\frac{3\sqrt{2}}{2}, -\frac{3\sqrt{2}}{2}\right)$

c. $\left(-\frac{3\sqrt{2}}{2}, -\frac{3\sqrt{2}}{2}\right)$

d. $\left(\frac{3\sqrt{2}}{2}, \frac{3\sqrt{2}}{2}\right)$

20. Polar coordinates are given, find the rectangular coordinates.

$\left(9, \frac{3\pi}{4}\right)$

a. $\left(-\frac{9\sqrt{2}}{2}, \frac{9\sqrt{2}}{2}\right)$

b. $\left(-\frac{9\sqrt{2}}{2}, -\frac{9\sqrt{2}}{2}\right)$

c. $\left(\frac{9\sqrt{2}}{2}, \frac{9\sqrt{2}}{2}\right)$

d. $\left(\frac{9\sqrt{2}}{2}, -\frac{9\sqrt{2}}{2}\right)$

21. Convert the rectangular equation to a polar equation that expresses r in terms of θ

X = 3

a. r = 3
b. COSθ = 3
c. r COSθ = 3
d. r SINθ = 3

22. Convert the polar equation to a rectangular equation

R = -9 COSθ

a. $x^2 + y^2 = 9$
b. x = -9
c. $x^2 + y^2 + 9x = 0$
d. $x^2 + y^2 - 9x = 0$

23. Find another representation of (r, θ), for the point under the given conditions.

$$(6, \frac{\pi}{4}) \quad r > 0 \text{ and } 2\pi < \theta$$

a. (6, $\frac{9}{4}\pi$)

b. (6, $\frac{5}{4}\pi$)

c. (6, $-\frac{7}{4}\pi$)

d. (6, $-\frac{3}{4}\pi$)

24. Polar coordinates are given, find rectangular coordinates

(-1 , - 180°)

a. (0, 1)
b. (1, 0)
c. (0, -1)
d. (-1, 0)

25. Rectangular coordinates are given, find polar coordinates.

(3√3, 3)

a. (3, $\frac{\pi}{3}$)

b. (3, $\frac{7\pi}{6}$)

c. (6, $\frac{\pi}{3}$)

d. (6, $\frac{\pi}{6}$)

26. Convert polar equation to rectangular equation.

R = 2

a. x = 2
b. $x^2 + y^2 = 4$
c. y = 2
d. $y^2 = 4$

27. Test the equation for symmetry with respect to the given axis

R = -2 COSθ polar axis

a. Has symmetry
b. May or may not have symmetry

28. Convert rectangular equation to a polar equation the expresses r in terms of θ

$$x^2 + y^2 = 25$$

a. r = 25
b. r (COSθ + SINθ) = 5
c. r = 5
d. r (COSθ + SINθ) = 25

29. Find another representation (r, θ), for the point under the given conditions

$$(4, \frac{\pi}{4}) \; r > 0 \text{ and } -2\pi < \theta < 0$$

a. (4, $-\frac{7}{4}\pi$)
b. (4, $-\frac{3}{4}\pi$)
c. (4, $\frac{5}{4}\pi$)
d. (4, $\frac{9}{4}\pi$)