

SOLVING TRIGONOMETRIC EQUATIONS

Directions: Solve each trigonometric function for *ALL POSSIBLE VALUES IN DEGREES*. Use the hints provided.

HINT *COLLECT LIKE TERMS*

1.) $\cos x + \sqrt{3} = -\cos x$

HINT *EXTRACT SQUARE ROOTS*

2.) $4 \sin^2 \theta - 3 = 0$

Directions: Solve each trigonometric function for *ALL POSSIBLE VALUES IN RADIANS*. Use the hints provided.

HINT *FACTOR GCF*

3.) $2 \cos \theta \sin \theta = \cos \theta$

HINT *FACTOR EQUATION AS QUADRATIC TYPE*

4.) $2 \sin^2 x - 3 \sin x + 1 = 0$

Directions: Solve each trigonometric function *IN THE INTERVAL* $[0, 2\pi)$. Use the hints provided.

HINT *REWRITE WITH SINGLE TRIG FUNCTION*

5.) $3 \sec^2 x - 2 \tan^2 x - 4 = 0$

HINT *SQUARE & CONVERT TO QUADRATIC TYPE*

6.) $\sin \theta + 1 = \cos \theta$

Directions: Solve each trigonometric function *IN THE INTERVAL* $[0, 360)$. Use the hints provided.

HINT *FUNCTIONS OF MULTIPLE ANGLES*

7.) $\sin 2x - \frac{\sqrt{3}}{2} = 0$

HINT *USING INVERSE FUNCTIONS (calculator)*

8.) $4 \tan^2 \theta + 5 \tan \theta = 6$

Directions: Solve each trigonometric function for *ALL POSSIBLE VALUES IN DEGREES*.

9.) $2 \sin^2 \theta + \sin \theta - 1 = 0$

10.) $5(\sin \theta + 1) = 5$

11.) $7 \tan \theta = 3\sqrt{3} + \tan \theta$

12.) $2 \sin \theta \cos \theta + \cos \theta = 0$

Directions: Solve each trigonometric function for *ALL POSSIBLE VALUES IN RADIANS*.

13.) $2 \cos \theta - 1 = 0$

14.) $4 \sin \theta - 1 = 2 \sin \theta + 1$

$$15.) \sec \theta \csc \theta + \sqrt{2} \csc \theta = 0$$

$$16.) \cos^2 x + \sin x = 1$$

Directions: Solve each trigonometric function *IN THE INTERVAL* $[0, 360)$.

$$17.) \sec x + \tan x = 1$$

$$18.) \tan(3x) = 1$$

$$19.) 2 \sin x + 1 = \csc x$$

$$20.) 2 \sin^2 \theta - 1 = 0$$

Directions: Solve each trigonometric function *IN THE INTERVAL* $[0, 2\pi)$.

21.) $2 \sin^2 \theta - \sin \theta = 3$

22.) $3 \tan^2 \theta = 1$

23.) $\csc x + \cot x = 1$

24.) $2 \sin(2x) = -\sqrt{3}$

Directions: Use inverse functions to solve each trigonometric function *IN THE INTERVAL* $[0, 360)$. Round all answers to the nearest tenth.

25.) $\tan^2 x - 6 \tan x + 5$

26.) $2 \cos^2 x - 5 \cos x + 2 = 0$

