

Name: _____

Solving Trigonometric Equations

Exercise 1: Solve the equation.

1) $2 \cos x + 1 = 0$

2) $2 \sin x + 1 = 0$

3) $\sqrt{3} \csc x - 2 = 0$

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

5) $\tan x + \sqrt{3} = 0$

6) $3 \cot^2 x - 1 = 0$

7) $\sin x (\sin x + 1) = 0$

8) $\sin^2 x = 2 \cos^2 x$

9) $(3 \tan^2 x - 1)(\tan^2 x - 23) = 0$

10) $4 \cos^2 x - 1 = 0$

11) $2 \sin^2 x = 1$

12) $\tan^2 3x = 3$

13) $\tan 3x (\tan x - 1) = 0$

14) $\cos 2x (2 \cos x + 1) = 0$

Exercise 2: Find all solutions of the equation in the interval $(0, 2\pi)$.

1) $\cos^3 x = \cos x$

2) $\sec^2 x - 1 = 0$

3) $3 \tan^3 x = \tan x$

4) $2 \sin^2 x = 2 + \cos x$

5) $\sec^2 x - \sec x = 2$

6) $\sec x \csc x = 2 \csc x$

7) $2 \sin x + \csc x = 0$

8) $\sec x + \tan x = 1$

9) $2 \cos^2 x + \cos x - 1 = 0$

10) $2 \sin^2 x + 3 \sin x + 1 = 0$

11) $2 \sec^2 x + \sin x \tan^2 x - 3 = 0$

12) $\cos x + \sin x \tan x = 2$

13) $\cos x + \cot x = 1$

14) $\sin x - 2 = \cos x - 2$