

Precalculus  
Homework  
Trigonometric equations and inequalities

1. Find all values of  $x$  in the interval  $[0, 2\pi]$  that satisfy the equation.

(a)  $2 \cos x - 1 = 0$ .

(b)  $\sin(2x) = \cos x$ .

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

(d)  $2 \sin^2 x = 1$ .

(e)  $2 + \cos(2x) = 3 \cos x$ .

(f)  $2 \cos x + \sin(2x) = 0$ .

(g)  $2 \cos^2 x - (1 + \sqrt{2}) \cos x + \frac{\sqrt{2}}{2} = 0$ .

(h)  $|\tan x| = 1$ .

(i)  $3 \cot^2 x = 1$ .

(j)  $\sin x = \tan x$ .