

Complete all problems with your group, starting with your group's problem. You will be putting your problem on the board, so make sure it is neat and correct!

1. Prove: $\cot x(\tan x \sin x + \cos x) = \csc x$

2. Prove: $\csc x - \sin x = \cot x \cos x$

3. Prove: $\cos 3x + \cos x = 2 \cos 2x \cos x$

4. Prove: $\frac{2}{1 + \cos 2x} = \sec^2 x$

5. Solve for x over $[0, 2\pi)$: $2 \tan x \cos x = \tan x$

6. Solve for x over $[0, 2\pi)$: $\cos 2x = \cos x$

7. Find the exact value of the trig function: $\tan\left(\frac{7\pi}{12}\right)$

8. Find the exact value of the trig function: $\cos\left(\frac{7\pi}{8}\right)$