

PreCalculus
PreTest: 5.1 – 5.3

Name _____
Date _____ Block _____

All work and answers should be done on separate paper. Make sure your work is legible and all steps involved can be clearly followed.

In 1 – 5, simplify completely.

1. $\frac{\sin\left[\left(\frac{\pi}{2}\right) - x\right]}{\cos\left[\left(\frac{\pi}{2}\right) - x\right]}$

4. $\cot x \sec x$

2. $(1 - \cos^2 x)(\csc x)$

5. $\cos^2 x(\sec^2 x - 1)$

3. $\frac{\sin(-x)}{\cos(-x)}$

In 6 – 9, verify the identity.

6. $(\tan^2 x + 1)(\cos^2 x - 1) = -\tan^2 x$

7. $\frac{\cos x}{1 - \sin x} = \sec x + \tan x$

8. $\csc^4 x - 2\csc^2 x + 1 = \cot^4 x$

9. $\frac{\tan x}{\csc x} + \frac{\sin x}{\tan x} = \sec x$

In 10 - 13, find the general solutions to each equation.

10. $2\cos x + \sqrt{2} = 0$

11. $4\sin^2 x - 3 = 0$

12. $2\sin^2 x - 3\sin x + 1 = 0$

13. $\sec^2 x - \tan x = 1$

In 14 - 15, find all solutions on the interval $[0, 2\pi)$. When necessary, round decimals to the nearest thousandth.

14. $4\sin 3x = 2\sqrt{3}$

15. $5\tan^2 x + 8\tan x - 4 = 0$