

PreCalc Book: p. 400 15, 16, 19, 20, 25, 38, 41, 49, 52, 53, 54, 67, 68, 75, 80, 93, 107

Additional Problems:

Simplify the following. Make sure to show all work.

1. $\sec\theta - \sin\theta \tan\theta$

2. $\frac{\sec^2\theta}{\sec^2\theta - 1}$

3. Find the exact value of $\cos 285^\circ$ using a sum or difference identity.

4. Find the exact value of $\sin(u+v)$ given that $\sin u = -\frac{8}{17}$ and $\cos v = -\frac{24}{25}$.

Both u and v are in Quadrant III.

5. Use a double-angle formula to find the exact value of $\sin 2u$ when $\sin u = -\frac{12}{13}$, where $\pi < u < \frac{3\pi}{2}$.6. Use the half-angle identities to find the exact value of $\cos 112.5^\circ$.

Solve the following equations for all values of x .

7. $-2 = -2 \tan\theta$

8. $\csc^2\theta + 3\csc\theta + 2 = 0$

Solve the following equations in the interval $[0, 2\pi)$.

9. $\cos\frac{\theta}{2} = \frac{1}{2}$

10. $\tan^2\theta + 2 + 2\sec\theta = 0$

Verify the following identities.

11. $\cot\alpha \cos\alpha = \csc\alpha - \sin\alpha$

12. $\sec^2\theta \tan^2\theta - \tan^2\theta = \tan^4\theta$

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