

Simplify the expression.

1) $\sin \theta \cos \theta \sec \theta \csc \theta$

2) $\frac{\cos^2 x}{\sin^2 x} + \cos x \sec x$

Prove the Identity

3) $1 + \sec^2 x \sin^2 x = \sec^2 x$

4) $\tan^2 x = \sec^2 x - \sin^2 x - \cos^2 x$

5) $\cos^2 x - \sin^2 x = 1 - 2 \sin^2 x$

Find the exact value by using a sum or difference identity.

6) $\cos 75^\circ$

7) $\cos 5^\circ \cos 40^\circ - \sin 5^\circ \sin 40^\circ$

Answer Key

Testname: WORKSHEET 5-1 THRU 5-3 IDENTITIES AND SUM AND DIFFERENCE OF COSINE

1) 1

2) $\csc^2 x$

3) $1 + \tan^2 x = \sec^2 x$

4) $= \sec^2 x - (\sin^2 x + \cos^2 x) = \sec^2 x + 1 = \tan^2 x$

5) $(1 - \sin^2 x) - \sin^2 x = 1 - 2\sin^2 x$

6) $\frac{(\sqrt{6} - \sqrt{2})}{4}$

7) $\frac{\sqrt{2}}{2}$