

PRACTICE PROBLEMS FOR REVIEW OF CHAPTER 5 (solve on a separate paper)

Prove each identity|

1. $\sin x + \cos x \cot x = \csc x$

2. $\frac{\sin^2 2x}{1 - \cos 2x} = 2 \cos^2 x$

3. $\frac{\sin(A + B)}{\sin A \sin B} = \cot A + \cot B$

4. $\frac{\tan^2 y - \sin^2 y}{\sec^2 y - 1} = \sin^2 y$

5. $\cos(\pi + \theta)\cos(\frac{\pi}{2} - \theta) = \frac{-1}{2} \sin 2\theta$

6. If $\sin \theta = x$ and $\cos \theta > 0$,
find $\tan 2\theta$ in terms of x .

Let $\sin A = 1/2$ with $0^\circ < A < 90^\circ$ and $\sin B = 3/5$ with $90^\circ < B < 180^\circ$

Find the values of:

7. $\cos(A + B)$

8. $\sin 2B$

9. $\cos(2A)$

10. $\sin(B/2)$

Find the exact values of each expression using a sum or a difference formula.

11. $\cos 15^\circ$

12. $\sin 75^\circ$

Evaluate each expression. Assume any variable represents a positive numbers.

13. $\cos(\arcsin \frac{3}{5} + \arctan \frac{4}{3})$

14. $\sin(2 \cos^{-1} x)$

15. Rewrite expression as a sum or difference and simplify, if possible.

$\sin \frac{5\pi}{12} \cos \frac{7\pi}{12}$

ANSWERS TO CH5

Answers to #1 - #5 are proofs which may vary

6. $\frac{2x\sqrt{1-x^2}}{1-2x^2}$

7. $\frac{-4\sqrt{3}-3}{10}$

8. $-24/25$

9. $1/2$

10. $\frac{3\sqrt{10}}{10}$

11. $\frac{\sqrt{6}+\sqrt{2}}{4}$

12. $\frac{\sqrt{6}+\sqrt{2}}{4}$

13. 0

14. $2x\sqrt{1-x^2}$

15. $-1/4$