

Recall:

QI:

PI:

Today, include: Reciprocal Identities (RI):

co-secant: $csc\theta = \frac{1}{sin\theta}$

secant: $sec\theta = \frac{1}{cos\theta}$

co-tangent: $cot\theta = \frac{1}{tan\theta}$

Example 1) Prove.

a) $1 - sin^2\theta = sin\theta cos\theta cot\theta$ b) $1 + tan^2\theta = sec^2\theta$ c) $tan\theta + cot\theta = \frac{sec\theta}{sin\theta}$

U5D8 Worksheet:**Trigonometric Identities**

Prove each identity.

1. $sin\theta = cos\theta tan\theta$

10. $csc^2\theta = cot^2\theta + 1$

2. $csc\theta = sec\theta cot\theta$

11. $\frac{cos\theta}{1+sin\theta} = \frac{1-sin\theta}{cos\theta}$

3. $cos\theta = sin\theta cot\theta$

12. $\frac{cos\theta}{1-sin\theta} + \frac{cos\theta}{1+sin\theta} = \frac{2}{cos\theta}$

5. $1 + csc A = csc A (1 + sin A)$

13. $csc^2\theta cos^2\theta = csc^2\theta - 1$

6. $cot B sin B sec B = 1$

14. $tan\theta + cot\theta = \frac{sec\theta}{sin\theta}$

7. $cos C (sec C - 1) = 1 - cos C$

15. $\frac{cot\theta}{csc\theta} = cos\theta$

8. $1 + sin D = sin D (1 + csc D)$

9. $1 - sin^2\theta = sin\theta cos\theta cot\theta$