Section 14.3

Fundamental Trigonometric Identities

Reciprocal Identities:

$csc\theta =$

$sec\theta =$

$cot\theta =$

Tangent and Cotangent ratios:

$tan\theta =$ $cot\theta =$

Pythagorean Identities:

Negative Angle Identities:

$\sin(-\theta) = -\sin\theta$

$\cos(-\theta) = \cos\theta$

$\tan(-\theta) = -\tan\theta$

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Example #1: **Prove the trig identity.**

$$\tan\theta = \frac{\sec\theta}{\csc\theta}$$

Example #2: **Prove the trig identity.**

sin θ cot θ = cos θ

You try: $cos^2\theta(sec^2\theta - 1) = sin^2\theta$

Example #3: **Rewrite in terms of cosine and then simplify.**

sec θ (1 – sin$^2\theta$)

Example #4: **Rewrite in terms of cosine and then simplify.**

$$\frac{2\left(\csc^2\theta - \cot^2\theta\right)}{\sec\theta}$$

You try: **Simplify:** $csc\theta cos\theta tan\theta$