6.3) Using sec x, cosec x and cot x

Worked example

Simplify:

$$\cos\theta \tan\theta \operatorname{cosec}\theta$$

Your turn

Simplify:

$$\sin\theta \cot\theta \sec\theta$$

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Worked example

Simplify:

$$\sin\theta\cos\theta\ \ (cosec\ \theta - \sec\theta)$$

Your turn

Simplify:

$$\sin\theta\cos\theta\ \ (\sec\theta + cosec\ \theta)$$

$$\sin\theta + \cos\theta$$

Worked example

Prove that:

$$\frac{\tan\theta \ \ sec\ \theta}{\sec^2\theta + cosec^2\ \theta} \equiv \sin^3\theta$$

Your turn

Prove that:

$$\frac{\cot\theta \ \ cosec\ \theta}{\sec^2\theta + cosec^2\ \theta} \equiv \cos^3\theta$$

Proof

Worked example

Prove that:

$$\operatorname{cosec} x - \sin x \equiv \cos x \cot x$$

Your turn

Prove that:

$$\sec x - \cos x \equiv \sin x \tan x$$

Proof

Worked example

Prove that:

$$(1 + \sin x)(sec\, x - \tan x) \equiv \cos x$$

Your turn

Prove that:

$$(1 + \cos x)(cosec\, x - \cot x) \equiv \sin x$$

Proof