

Name : \_\_\_\_\_

## Simplify

Sheet 1

Simplify each trigonometric expression using Pythagorean identities.

1)  $\sin x \tan x + \cos x$

2)  $\frac{-6(1 - \csc^2 x)}{\cot^2 x}$

3)  $(1 + \cot^2 x) \sin x$

4)  $\frac{-1 + \sec^2 x}{\sec^2 x}$

5)  $\frac{\tan^2 x + 1}{\cot^2 x - \csc^2 x}$

6)  $\sin^2 x - \sin^2 x \cos^2 x$

Name : \_\_\_\_\_

## Answer key

Sheet 1

### Simplify

Simplify each trigonometric expression using Pythagorean identities.

1)  $\sin x \tan x + \cos x$

**sec x**

2)  $\frac{-6(1 - \csc^2 x)}{\cot^2 x}$

**6**

3)  $(1 + \cot^2 x) \sin x$

**csc x**

4)  $\frac{-1 + \sec^2 x}{\sec^2 x}$

**sin<sup>2</sup> x**

5)  $\frac{\tan^2 x + 1}{\cot^2 x - \csc^2 x}$

**-sec<sup>2</sup> x**

6)  $\sin^2 x - \sin^2 x \cos^2 x$

**sin<sup>4</sup> x**