

## Today's Learning Goal(s):

Date: \_\_\_\_\_

By the end of the class, I will be able to:

- a) prove trigonometric identities.

Last day's work:

## 5.5 Trigonometric Identities

Date: \_\_\_\_\_

**Equations** are valid for only certain values of the variable.

For example:

$$2x + 1 = 7$$

$$x^2 - 5x - 14 = 0$$

**Identities** are valid for **all values** of the variable.

For example:

$$2(x + 3) = 2x + 6$$

$$x^2 + 6x + 9 = (x + 3)^2$$

Let's start with the circle definitions to develop some identities that we can use later.

***SYR CXR TYX***

Ex.1 Prove that  $\tan \theta = \frac{\sin \theta}{\cos \theta}$

Ex.2 Prove that  $\sin^2 \theta + \cos^2 \theta = 1$

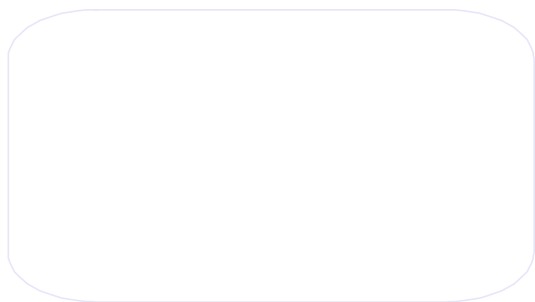
Ex.3 Prove that

a)  $\frac{\cos \alpha \tan \alpha}{\sin \alpha} = 1$

b)  $\cos \phi = \frac{1}{\cos \phi} - \sin \phi \tan \phi$

## Identities

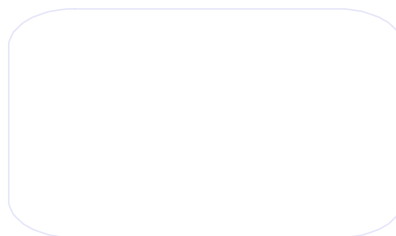
### Reciprocal Identities



### Quotient Identities



### Pythagorean Identities



Are there any Homework Questions you would like to see on the board?

Last day's work:

Today's Homework Practice includes:

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Note: Sometimes using substitution can help simplify a question.

Ex. Simplify  $(1 - \cos\theta)(1 + \cos\theta)$

Change to