

# IDENTIDADES TRIGONOMÉTRICAS 1

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Simplify the expression.

1)  $\frac{\cos \theta}{1 + \sin \theta} + \tan \theta$  1) \_\_\_\_\_

- A)  $\cos \theta + \sin \theta$       B)  $\sec \theta$       C)  $\sin^2 \theta$       D) 1

2)  $(1 + \cot \theta)(1 - \cot \theta) - \csc^2 \theta$  2) \_\_\_\_\_

- A)  $-2 \cot^2 \theta$       B)  $2 \cot^2 \theta$       C) 0      D) 2

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Establish the identity.

3)  $\cot \theta \cdot \sec \theta = \csc \theta$  3) \_\_\_\_\_

4)  $\tan u(\csc u - \sin u) = \cos u$  4) \_\_\_\_\_

5)  $\csc^2 u - \cos u \sec u = \cot^2 u$  5) \_\_\_\_\_

6)  $(\sin x)(\tan x \cos x - \cot x \cos x) = 1 - 2 \cos^2 x$  6) \_\_\_\_\_

7)  $(\sec u - \tan u)(\sec u + \tan u) = 1$  7) \_\_\_\_\_

8)  $(1 + \tan^2 u)(1 - \sin^2 u) = 1$  8) \_\_\_\_\_

9)  $\sec u + \tan u = \frac{\cos u}{1 - \sin u}$  9) \_\_\_\_\_

10)  $\frac{\tan u - 1}{\tan u + 1} = \frac{1 - \cot u}{1 + \cot u}$  10) \_\_\_\_\_

11)  $\frac{1 - \cos \theta}{1 + \cos \theta} = \frac{\sec \theta - 1}{\sec \theta + 1}$  11) \_\_\_\_\_

12)  $\frac{1 - \sec \theta}{\tan \theta} + \frac{\tan \theta}{1 - \sec \theta} = -2 \csc \theta$  12) \_\_\_\_\_

13)  $(\sec v + \tan v)^2 = \frac{1 + \sin v}{1 - \sin v}$  13) \_\_\_\_\_

14)  $\frac{\sin \alpha + \sin \beta}{\csc \alpha + \csc \beta} = \sin \alpha \sin \beta$  14) \_\_\_\_\_

$$15) \frac{\sin x}{1 - \cos x} + \frac{\sin x}{1 + \cos x} = 2 \csc x$$

15) \_\_\_\_\_

$$16) \sec^4 x - \tan^4 x = \sec^2 x + \tan^2 x$$

16) \_\_\_\_\_

$$17) \frac{1 + \csc x}{\sec x} = \cos x + \cot x$$

17) \_\_\_\_\_

$$18) \frac{\csc x - 1}{\csc x + 1} = \frac{\cot^2 x}{\csc^2 x + 2 \csc x + 1}$$

18) \_\_\_\_\_

$$19) \frac{\cos x}{\sec x - 1} - \frac{\cos x}{\sec x + 1} = \frac{2 \cos x}{\tan^2 x}$$

19) \_\_\_\_\_

$$20) \cot^3 x = \cot x (\csc^2 x - 1)$$

20) \_\_\_\_\_