

TRIGONOMETRY JOURNAL
IDENTITIES

1. The purpose of trig identities is to _____
_____.
2. Determine whether each of the following statements is mathematically correct (C) or incorrect (I). Explain the error in all incorrect statements.
 - a) $\tan x \cot x = 1$ C I _____
 - b) $\sin^3 x + \cos^3 x = 1$ C I _____
 - c) $\csc = \frac{1}{\sin}$ C I _____
 - d) $\cos^2 x - \sin^2 x = 1 - 2\sin^2 x$ C I _____
 - e) $\sin 4x + \sin 2x = 2 \sin 3x \cos x$ C I _____
 - f) $\cos(A + B) = \cos A + \cos B$ C I _____
3. List three tips you consider important for verifying identities.
 - a) _____

 - b) _____

 - c) _____

4. When verifying identities, you know when to use a sum and difference identity when _____
_____.
5. Two ways you can use to determine which $\cos 2A$ identity is best to use are _____ and _____
_____.
6. The additional step you must perform in finding the value of $\sin \frac{\theta}{2}$ or $\cos \frac{\theta}{2}$ is _____
_____ by _____.
7. The purpose of the sum and product identities is _____
_____.

8. Identify the 5 mistakes in the proof of the identity below.

$$\sin 3x = \tan x \csc x - 2 \sin x$$

$$\sin(2x + x) = \frac{\sin x}{\cos x} \cdot \frac{1}{\cos x} - 2 \sin x$$

$$\sin 2x \cos x - \cos 2x \sin x = \frac{\sin x}{\cos^2 x} - 2 \sin x$$

$$(2 \sin x \cos x) \cos x - (1 - 2 \cos^2 x) \sin x = \frac{\sin x}{\cos^2 x} - \frac{2 \sin x \cos^2 x}{\cos^2 x}$$

$$2 \sin x \cos^2 x - \sin x - 2 \sin x \cos^2 x = \frac{\sin x - 2 \sin x \cos^2 x}{\cos^2 x}$$

$$- \sin x = \sin x - 2 \sin x$$

$$- \sin x = - \sin x$$

9. *List all of the identities studied in this unit OR attach a copy of the identity sheet to this journal.*