

Name \_\_\_\_\_

Date \_\_\_\_\_

**Pythagorean Identities - Matching Worksheet**

Write the letter of the answer that matches the problem.

1. Simplify:

\_\_\_\_\_

$$\frac{1 + \tan^2 x}{1 + \cot^2 x}$$

a.

$\cos^2 x$

2. Simplify:

\_\_\_\_\_

$$\frac{\sec^2 x - \cos^2 x}{\tan^2 x}$$

b.

Yes, it is proved.

3. Simplify:

\_\_\_\_\_

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

c.

$\tan^2 x$

4. Verify:

\_\_\_\_\_

$$\csc 2x = \frac{\sec x}{2 \sin x}$$

d.

$1 + \cos^2 x$

5. Verify:

\_\_\_\_\_

$$\tan\left(\frac{\pi}{4} + x\right) = \frac{\cot 2x}{1 - \sin^2 x}$$

e.

No, it is not proved.

