

$$\sin^2 + \cos^2 = 1$$

Chapter 10.6

Fundamental Trig Identities Assignment #18

For each problem, simply the expressions as much as possible.

1) $\frac{\tan x \csc x}{\sec x}$

$$\frac{\frac{\cancel{\sin}}{\cos} \cdot \frac{1}{\cancel{\sin}}}{\frac{1}{\cos}}$$

$$\frac{\frac{1}{\cos}}{\frac{1}{\cos}}$$

$$\frac{1}{\cos} \cdot \frac{\cos}{1}$$

Final answer #1

①

3) $\tan x (\cos^2(x))$

$$\frac{\cancel{\sin}}{\cancel{\cos}} \cdot \frac{\cos}{1} \cdot \frac{\cos}{1}$$

$$\sin x \cos x$$

Final answer #3

$\sin x \cdot \cos x$

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

** great problem*

$$\frac{\cos x}{\frac{1}{\cos} - \frac{\sin}{\cos}}$$

$$\frac{\cos}{\frac{1 - \sin}{\cos}}$$

$$\frac{\cos^2}{1 - \sin}$$

$$\frac{\cos}{1} \cdot \frac{\cos}{1 - \sin}$$

$$\frac{\cos^2}{1 - \sin} \Rightarrow \frac{(1 - \sin)(1 + \sin)}{1 - \sin}$$

Final answer #2

① + sin

4) $\sin x \cot x$

$$\frac{\cancel{\sin} x}{1} \cdot \frac{\cos}{\cancel{\sin}}$$

Final answer #4

$\cos(x)$

$$\sin^2 + \cos^2 = 1$$

5) $\frac{\tan x}{\cot x}$

$$\frac{\frac{\sin}{\cos}}{\frac{\cos}{\sin}}$$

$$\frac{\sin}{\cos} \cdot \frac{\sin}{\cos}$$

$$\frac{\sin^2}{\cos^2}$$

6) $\cos x \tan x \csc x$

$$\frac{\cos}{1} \cdot \frac{\sin}{\cos} \cdot \frac{1}{\sin}$$

Final answer #5

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

Final answer #6

$$1$$

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

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

$$\frac{\sin^2(x)}{\sin^2(x)}$$

Final answer #7

$$1$$

8) $\frac{\cos^2(x)}{1 + \sin(x)}$

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

$$\frac{(1 - \sin(x))(1 + \sin(x))}{(1 + \sin(x))}$$

Final answer #8

$$1 - \sin(x)$$