Precalculus Warm-Up - Section 5.1 and 5.2

Match the function with one of the following.

(a) $\sec^2 x \csc^2 x$	**(b)** $\sec x + \tan x$	**(c)** $2\sec^2 x$
(d) $\tan x \sin x$	**(e)** $\sin x \cos x$	

1) $(1+\sec x)(1-\cos x)$ **1)** d

$1-\cos x+\sec x-1$

$\frac{\sec x}{1}-\frac{\cos x}{\cos x}=\frac{1-\cos^2 x}{\cos x}=\frac{\sin^2 x}{\cos x}=\tan x\sin x$

2) $\sec^2 x+\csc^2 x$ **2)** a

$\frac{1}{\cos^2 x}+\frac{1}{\sin^2 x}=\frac{\sin^2 x+\cos^2 x}{\cos^2 x\sin^2 x}=\frac{1}{\cos^2 x\sin^2 x}=\sec^2 x\csc^2 x$

3) $\dfrac{1}{1+\sin x}+\dfrac{1}{1-\sin x}$ **3)** c

$\frac{1-\sin x+1+\sin x}{1-\sin^2 x}=\frac{2}{\cos^2 x}=2\sec^2 x$

4) $\dfrac{1}{\tan x+\cot x}$ **4)** e

$\frac{1}{\frac{\sin x}{\cos x}+\frac{\cos x}{\sin x}}=\frac{1}{\frac{\sin^2 x+\cos^2 x}{\sin x\cos x}}=1\cdot\frac{\sin x\cos x}{1}$

5) $\dfrac{\cos x}{1-\sin x}\cdot\dfrac{1+\sin x}{1+\sin x}=\dfrac{\cos x(1+\sin x)}{1-\sin^2 x}$ **5)** b

$\frac{\cos x(1+\sin x)}{\cos^2 x}=\frac{1+\sin x}{\cos x}=\sec x+\tan x$