After Class today (Tue 3/23) someone asked me about
WA HW10-7.1; #5 — HERE IT IS!

Simplify \( \frac{\cos x}{\sec x + \tan x} \)

**Solution**

There are several perfectly good ways to "do" this problem.

One way is to simplify all the trig functions into sine and cosine combinations & see what happens:

\[
\frac{\cos x}{\sec x + \tan x} = \frac{\cos x}{\frac{1}{\cos x} + \frac{\sin x}{\cos x}} = \frac{\cos x}{\frac{1 + \sin x}{\cos x}}
\]

\[
= \cos x \cdot \frac{\cos x}{1 + \sin x}
\]

\[
= \frac{\cos^2 x}{1 + \sin x}
\]

\[
= \frac{1 - \sin^2 x}{1 + \sin x}
\]

\[
= \frac{(1 - \sin x)(1 + \sin x)}{1 + \sin x}
\]

\[
= 1 - \sin x
\]

**Cancel!**

\[
\frac{\cos x}{\sec x + \tan x} = 1 - \sin x
\]

So you just punch in \( 1 - \sin x \).