

**Math 109, PRACTICE Quiz 5: Differentiation with Trig. Functions**

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Name: \_\_\_\_\_

Section: \_\_\_\_\_

You have 10 minutes to complete the following problems, without using your notes, book, or calculator.

1. Differentiate:

$$\frac{d}{dx} \sin x =$$

$$\frac{d}{dx} \tan x =$$

$$\frac{d}{dx} \cot x =$$

$$\frac{d}{dx} \cos x =$$

$$\frac{d}{dx} \sec x =$$

$$\frac{d}{dx} \csc x =$$

2. Differentiate. Do *not* simplify.

$$(a) \frac{d}{dx} x^3 \cos x =$$

$$(b) \frac{d}{dx} \frac{\tan x}{2x + x^4} =$$

$$(c) \frac{d}{dx} \sin^2 x =$$

$$(d) \frac{d}{dx} \csc(4x^5) =$$