

Name: _____

Date: _____

Instructions: All problems require you to show your work. To receive full credit, answers must have proper justification

1. Fill in the following derivative rules:

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

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

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

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

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

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

Determine each of the following derivatives:

$$2. \frac{d}{dx} (5 \cos x + 8x^5 + e^x)$$

$$3. f'(x) \text{ if } f(x) = 5x^4 \tan(x)$$

$$4. \frac{d}{dx} \frac{5x^7 + \sin x}{\cot x}$$