

A spiral-bound notebook with a light-colored, textured cover. The spiral binding is on the left side. The text is centered on the cover.

Trig Derivatives  
**MIXED REVIEW**  
**(Practice WS #4,5,6)**

#1. Find the *derivative*.

$$y = 4x^6 \cdot \cot x$$

#2. Find the *derivative*.

$$y = \tan^2 x \cot x \csc x$$

**#3.** Find the *derivative*.

$$y = \sec(6x^3 - 2)$$

#4. Find the *derivative*.

$$y = \frac{\tan x}{10x^2}$$

#5. Find the *derivative*.

$$y = 2 \cos^6 x$$

#6. Find the *derivative*.

$$y = \sec^2 x - \sin^2 x \sec^2 x$$

#7. Find the *derivative*.

$$y = \csc^3(2x^2)$$



**#8.** Find the *rate of change* for the following at  $(x = \pi)$ .

$$y = \sin x \cdot \cot x$$

#9. Find the *derivative*.

$$y = \cos x - \frac{\cot x}{\csc x}$$

**#10.** Find the *slope*  
for the following at  $(x = \pi/4)$ .

$$f(x) = 4x^2 - \cos x - \sin x$$

# SOLUTIONS

1.  $y' = -4x^5(x \csc^2 x - 6 \cot x)$

2.  $y' = \sec x \tan x$

3.  $y' = 18x^2 \sec(6x^3 - 2) \tan(6x^3 - 2)$

4.  $y' = \frac{x \sec^2 x - 2 \tan x}{10x^3}$

5.  $y' = -12 \cos^5 x \sin x$

6.  $y' = 0$

7.  $y' = -12x \csc^3(2x^2) \cot(2x^2)$

8.  $f'(x) = -\sin x, \quad f'(\pi) = 0, \quad \therefore m = 0$

9.  $y' = 0$

10.  $f'(x) = 8x + \sin x - \cos x \quad f'\left(\frac{\pi}{4}\right) = 2\pi \quad \therefore m = 2\pi$