

## Problem Set #4 (3 pts. each)

Name \_\_\_\_\_

1.  $f(x) = x^4 - 4x^3 + 7x^2 - 2x + 9$

2.  $f(x) = 7\sqrt{2x - 3}$

3.  $f(x) = 7\sin(3x)$

4.  $f(x) = x + 5\sec^3(3x + 7)$

5.  $f(x) = (1 + \tan(3x))^{\frac{2}{3}}$

6.  $f(x) = \csc(3x^2)$

7.  $f(x) = \frac{4x^3 + x^2 - 3}{x^2}$

8.  $f(x) = \frac{x}{\sin(x)}$

9.  $f(x) = x\sin(x) + \cos(x)$

10.  $f(x) = \frac{5}{3\sqrt{2x + 1}}$

11.  $f(x) = 3\tan(x^2) + 10$

12.  $f(x) = 10x\sec(x)$

13.  $f(x) = (x^5 + 3)^9$

14.  $f(x) = \frac{2}{5x^6}$

15.  $f(x) = 4\sin^2(x - 3) + 4\cos^2(x - 3)$

16.  $f(x) = x^3 \sec^4(2x)$

17.  $f(x) = \frac{(3x + 2)^3}{x - 1}$

18.  $f(x) = \cot(3 - 2x)$

19.  $f(x) = [\sin(4x - 3)]^5$

20.  $f(x) = \frac{3x - 5}{10 - 7x}$

21.  $f(x) = 4x^2 \csc(x)$

22.  $f(x) = 8x^2 \sin(3)$

23.  $f(x) = \left[ \frac{3x + 2}{x - 9} \right]^5$

24.  $f(x) = \frac{\tan(x) - 1}{\sec(x)}$

25.  $f(x) = 7x^2 - \cos^3(5x)$

26.  $f(x) = \frac{x \tan(x)}{3x - 1}$

27.  $f(x) = \frac{\tan(4x)}{3x}$

Use the table to find each derivative.

	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
$x = 2$	2	6	3	-2
$x = 3$	5	7	1	-1

28.  $h(x) = f(g(x))$  find  $h'(2)$

29.  $h(x) = \frac{f(x)}{g(x)}$  find  $h'(3)$

30.  $h(x) = f(x)g(x)$  find  $h'(3)$

31.  $h(x) = f(x) + g(x)$  find  $h'(3)$

32.  $h(x) = [f(x)]^3$  find  $h'(2)$

33.  $h(x) = -2f(x)$  find  $h'(2)$