AP Calculus AB

The Chain Rule with Trig

HW 2-9

Name: _____

Differentiate.

1) $y = \sin 4x$

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

3) $y = \sec(6x)$

4) $y = \sin^2 x$

5) $y = \cos^2(2x)$

6) $y = \sin(3x-4)$

7) $y = (\csc 5x)^3$

8) $y = (2x^5+3)\cos x^2$

9) $y = \dfrac{-2x^2-5}{\cos 2x^3}$

10) $f(x) = \sin^3 x^5$

11) $f(x) = \cos(-3x^2+2)^2$

12) $y = \dfrac{\sin 4x}{\sin 6x}$

13) $f(x) = \sin(\cos(\tan x))$

14) $y = \sin^3 x \tan 4x$

15) $y = (1+\cos^2 7x)^3$

16) $y = \sin^{-5} x - \cos^3 x$

17) $y = \cos\left(\frac{\pi}{2} - 3x\right)$

18) $y = \frac{4}{3\pi}\sin 3x + \frac{4}{5\pi}\cos 5x$

19) $y = \cos^2\sqrt{\sin(\tan(\pi x))}$

20) Given the table of values, find the following values.

x	f(x)	g(x)	f'(x)	g'(x)
1	3	2	4	6
2	1	8	5	7
3	7	2	7	9

a) $h(x) = f(g(x))$, find $h'(1)$.

b) $h(x) = g(f(x))$, find $h'(1)$.

c) $h(x) = f(f(x))$, find $h'(2)$.

d) $h(x) = g(g(x))$, find $h'(3)$.