Name _____

Homework 8
Section 3.2

1. (5) Compute (and simplify) $\frac{dy}{dx}$ for $y = \dfrac{4x-1}{3x^2+2}$

2. (6) Find the equation of the tangent line to the graph of $f(x) = \dfrac{4-2x}{x-6}$ at $x = 10$. Write your answer in slope-intercept form.

3. (3ea) Consider the functions $f(x)$ and $g(x)$, some of whose values are given in the table below. Use the product and/or quotient rule to compute the desired quantities.

x	$f(x)$	$f'(x)$	$g(x)$	$g'(x)$
1	5	1/2	-2	3
2	3	-4	5	4
3	6	1	7	6

(a) $h'(1)$ if $h(x) = \frac{g(x)}{f(x)}$ (write out an expression for $h'(x)$, then evaluate it)

(b) $k'(2)$ if $k(x) = g(x)f(x)$

(c) $m'(3)$ if $m(x) = x^2 f(x)$