Name _____

Homework 7
Section 3.3

1. (3) Compute $f'(t)$ for $f(t) = \dfrac{6t-3}{5t+2}$.

2. (5) Find the equation of the tangent line to the graph of $f(x) = (e^x + 2)(x^4 - 7x + 4)$ at $x = 0$. Write your answer in slope-intercept form.

3. (2) Find (and simplify) $\dfrac{dw}{dx}$ for $w = \dfrac{4x^5 + 2x^4 - 9x^2}{x^2}$.

4. (4) Determine (and simplify) the derivative of $f(x) = \dfrac{x-1}{x^2 e^x}$.

5. (2ea) 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 $m(x) = x^2 f(x)$