2.9 The Quotient Rule

Calculus Name: _____ **CA #1**

Find the derivative of each function.

1. $h(x) = \frac{x^2+4x-1}{x-3}$

2. $g(x) = \frac{5e^x}{2\sin x}$

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

4. $g(x) = \frac{4x^3-5x^2+5x}{x^2}$

5. $h(x) = \frac{5x^2}{\ln x}$

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

7. $h(x) = \frac{8x^3+4x^2-9x}{2x}$

Use the table to find the value of the derivatives of each function.

8.

x	$j(x)$	$j'(x)$	$k(x)$	$k'(x)$
-1	6	-4	5	-6

a. $h(x) = \frac{2j(x)}{k(x)}$
Find $h'(-1)$.

b. $f(x) = \frac{1-k(x)}{\frac{j(x)}{2}-4}$
Find $f'(-1)$.

Use the table to find the value of the derivatives of each function.

9.

t	$c(t)$	$c'(t)$	$l(t)$	$l'(t)$
2	3	-2	-1	2

a. $f(t) = -\frac{l(t)}{3c(t)}$
Find $f'(2)$.

b. $h(t) = \frac{5-c(t)}{1+2l(t)}$
Find $h'(2)$.

Answers to 2.9 CA #1

1. $\frac{x^2-6x-11}{(x-3)^2}$	2. $\frac{10e^x(\sin x-\cos x)}{4\sin^2 x}$	3. $\frac{21\cos x-3\sin x(2-7x)}{(2-7x)^2}$	4. $4-\frac{5}{x^2}$	
5. $\frac{10x\ln x-5x}{(\ln x)^2}$	6. $-\frac{x^2+4x-2}{(x^2+2)^2}$	7. $8x+2$	8a. $\frac{32}{25}$ 8b. -14	9a. $-\frac{4}{27}$ 9b. -10