69 **1.** Pour tout $x < 0$, $f'(x) = -15(1-5x)^2$ et $g'(x) = \frac{2}{(5-x)^3}$

2. a. $f'(0) = -15(1-5\times 0)^2 = -15$

b. $g'(0) = \frac{2}{(5-0)^3} = \frac{2}{125}$

c. $(fg)'(0) = f'(0)g(0) + f(0)g'(0) = -15 \times \frac{1}{25} + 1 \times \frac{2}{125} = \frac{-75+2}{125} = -\frac{73}{125}$

d. $\left(\frac{f}{g}\right)'(0) = \frac{f'(0)g(0) - f(0)g'(0)}{[g(0)]^2} = \frac{\frac{-75-2}{125}}{\frac{1}{5^4}} = -\frac{77}{5^3} \times 5^4 = -77 \times 5 = -385$