

Class prep quiz on section 3.1, Stewart's Calculus (8th ed.)

- Let $f(x) = 7^x$. Suppose someone claims that $f'(x) = x7^{x-1}$. What is the best response?
 - That's the correct answer.
 - The power rule doesn't apply here because x is in the wrong place.
 - The constant multiple rule says that $f'(x) = 7 \frac{d}{dx}(x) = 7$.
 - The answer is $f'(x) = 7^x$, because 7^x is exponential.
- Let $g(x) = e^{2x}$. Suppose someone claims that $g'(x) = e^{2x}$. What is the best response?
 - That's the correct answer.
 - The power rule says that $g'(x) = 2e^x$.
 - The exponent is not x , so you can't apply the e^x rule.
 - The power rule says that $g'(x) = (2x)e^{2x-1}$.
- Suppose $f(x)$ and $g(x)$ are differentiable, and suppose c is a constant. Which of the following is **NOT** necessarily true?
 - $\frac{d}{dx}(f(x) - g(x)) = f'(x) - g'(x)$
 - $\frac{d}{dx}(f(x)g(x)) = f'(x)g'(x)$
 - $\frac{d}{dx}(cf(x)) = cf'(x)$
 - $\frac{d}{dx}(f(x) + g(x)) = f'(x) + g'(x)$
- Let $h(x) = 3x^5 - 7e^x + 5\sqrt{x}$. What is $h'(x)$?
 - $15x^5 - 7e^x + \frac{5\sqrt{x}}{2}$
 - $15x^5 - 7xe^{x-1} + \frac{5}{2\sqrt{x}}$
 - $15x^4 - 7xe^{x-1} + \frac{5\sqrt{x}}{2}$
 - $15x^4 - 7e^x + \frac{5}{2\sqrt{x}}$