<u>Your deriver's knowledge test</u>

Each of the following will result in an answer between 1-12. Work through the question to determine the solution. Then use the following to help you come up with 3 of your own problems that will result in answers between 1 and 12!

1. $-1\left[\lim_{x\to 0}\frac{x^2-8x}{x}\right]$

2. If $f(x) = 2x(x^3 + 4x)$, find $\frac{f''''(x)}{4}$.

3. $2\left[\frac{d^2}{dx^2}\left(\frac{x^3}{x}\right)\right]$

4. $\dfrac{\left[\frac{d}{dx}(2x+4)\right]}{\left[\frac{d^2}{dx^2}(x^2+4x)\right]}$

5. Find the slope of $f(x) = 4x^3 + x^2 - 1$ @ $x = -1$

6. Chain Rule: $\dfrac{\frac{d}{dx}(x+4)^4}{(x+4)^3}$