Items That Could Be Put On An Index Card for the Chapter 2 test

\[ \frac{df}{dx} = \lim_{h \to 0} \frac{f(x+h) - f(x)}{h} \]

\[(x + h)^3 = x^3 + 3x^2h + 3xh^2 + h^3\]

Think Powerfully not radically or fractiously

\[ \frac{dx^n}{dx} = nx^{n-1} \]

\[ \frac{dx}{dx} = 1, \quad \frac{d(x^2)}{dx} = 2x, \quad \frac{d(1/x)}{dx} = -1/x^2, \quad \frac{d(\sqrt{x})}{dx} = \frac{1}{2\sqrt{x}} \]

\[ \frac{d(e^x)}{dx} = e^x, \quad \frac{d(ln(x))}{dx} = \frac{1}{x}, \quad \frac{d(sin(x))}{dx} = cos(x), \quad \frac{d(cos(x))}{dx} = -sin(x) \]

additive constants deriv = 0
multiplicative constants pull out

\[ \frac{df}{dx} = \frac{df}{du} \cdot \frac{du}{dx} \] where \( u \) is the inside function.

\[ (f \cdot g)' = f' \cdot g + f \cdot g' \]

\[ \left( \frac{f}{g} \right)' = \left( \frac{f' \cdot g - f \cdot g'}{g^2} \right) \]

maybe include a quick example of a numerical table if you wish?