

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

$$\frac{df}{dx} = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{(x+h) - x}$$

$$(x+h)^3 = x^3 + 3x^2h + 3xh^2 + h^3$$

Think Powerfully not radically or fractionously

$$\frac{dx^n}{dx} = nx^{n-1}$$

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

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

additive constants deriv = 0

multiplicative constants pull out

$$\frac{df}{dx} = \frac{df}{du} \frac{du}{dx} \text{ where } u \text{ is the inside function.}$$

$$(f \cdot g)' = f' \cdot g + f \cdot g'$$

$$\left(\frac{f}{g}\right)' = \frac{f'g - fg'}{g^2}$$

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