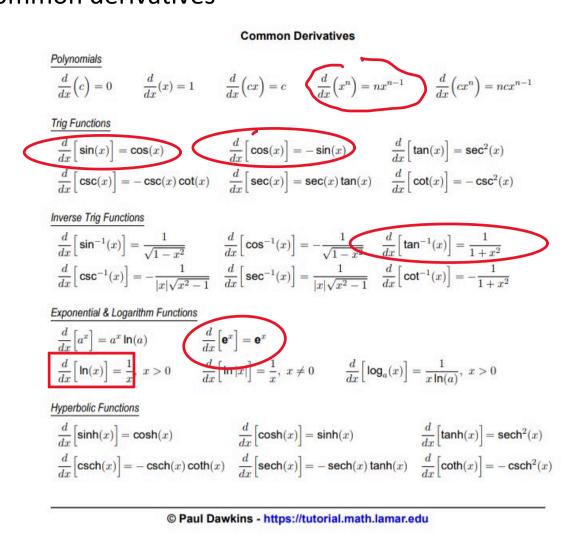
12:24 PM

Sunday, October 20, 2024

Common derivatives



$$\frac{d}{dx} (x^{n})$$

$$x^{3} \rightarrow 3 n^{3-1}$$

$$-73 n^{2}$$

Examples:

$$f(x) = (x^{3}) + e^{x}$$

$$g(x) = x^{3} + h(x) = e^{x}$$

$$g'(x) = x^{3} + h(x) = e^{x}$$

$$f'(x) = e^{x}$$

$$f'(x) = e^{x}$$

$$f'(x) = 3x^{2} + e^{x}$$

Polynomial and exponential Decivatives

Som Rule:
$$F(x) = g(x) + h(x)$$
,

 $f'(x) = g'(x) + h''(x)$

(unstant multiple culc: $F(x) = c \cdot g(x)$
 $f'(x) = (-g'(x))$

$$\frac{2}{g(x)} = \frac{\sin(x) + \cos(x)}{h(x)} + \frac{\cot(x)}{\cot(x)} = \frac{\cot(x)}{\cot(x)} = \frac{\cot(x)}{\cot(x)}$$

$$\frac{g(x)}{g(x)} = \frac{\cot(x)}{g(x)} + \frac{\cot(x)}{g(x)} = \frac{\cot(x)}{\gcd(x)}$$

$$\frac{g'(x)}{g(x)} = \frac{\cot(x)}{g(x)} + \frac{\cot(x)}{\gcd(x)}$$

$$\frac{g'(x)}{g(x)} = \frac{\cot(x)}{\gcd(x)} + \frac{\cot(x)}{\gcd(x)}$$

$$g^{2}(x) = (os(x) - g(x) = sin(x))$$
 $h^{2}(x) = -sin(x) = -h(x) = cos(x)$
 $f^{2}(x) = g^{2}(x) + h^{2}(x)$

$$g'(x) = \frac{1}{x} - 3 \ln(x)$$

$$h''(x) = \frac{1}{1+x^2} - 3 \tan^{-1}(x)$$

$$f'(x) = g'(x) + h'(x)$$

$$f^{\prime}(x) = \frac{1}{x} + \frac{1}{1+x^{2}}$$