Calculus AB Name_____ **Calculus AB Name**_____

4.1-4.4 Derivative Rules **4.1-4.4 Derivative Rules**

$\frac{d}{dx}(f\circ g)(x)$ chain rule	$f'(g(x))\cdot g'(x)$		$\frac{d}{dx}(f\circ g)(x)$		
$\frac{d}{dx}\sin u$	$\cos u\cdot\frac{du}{dx}$		$\frac{d}{dx}\sin u$		
$\frac{d}{dx}\cos u$	$-\sin u\cdot\frac{du}{dx}$		$\frac{d}{dx}\cos u$		
$\frac{d}{dx}\tan u$	$\sec^2 u\cdot\frac{du}{dx}$		$\frac{d}{dx}\tan u$		
$\frac{d}{dx}\csc u$	$-\csc u\cot u\cdot\frac{du}{dx}$		$\frac{d}{dx}\csc u$		
$\frac{d}{dx}\sec u$	$\sec u\tan u\cdot\frac{du}{dx}$		$\frac{d}{dx}\sec u$		
$\frac{d}{dx}\cot u$	$-\csc^2 u\cdot\frac{du}{dx}$		$\frac{d}{dx}\cot u$		
$\frac{d}{dx}\sin^{-1}u$	$\frac{1}{\sqrt{1-u^2}}\cdot\frac{du}{dx}$		$\frac{d}{dx}\sin^{-1}u$		
$\frac{d}{dx}\cos^{-1}u$	$\frac{-1}{\sqrt{1-u^2}}\cdot\frac{du}{dx}$		$\frac{d}{dx}\cos^{-1}u$		
$\frac{d}{dx}\tan^{-1}u$	$\frac{1}{1+u^2}\cdot\frac{du}{dx}$		$\frac{d}{dx}\tan^{-1}u$		
$\frac{d}{dx}\sec^{-1}u$	$\frac{1}{\lvert u\rvert\sqrt{u^2-1}}\cdot\frac{du}{dx}$		$\frac{d}{dx}\sec^{-1}u$		
$\frac{d}{dx}\csc^{-1}u$	$\frac{-1}{\lvert u\rvert\sqrt{u^2-1}}\cdot\frac{du}{dx}$		$\frac{d}{dx}\csc^{-1}u$		
$\frac{d}{dx}\cot^{-1}u$	$\frac{-1}{1+u^2}\cdot\frac{du}{dx}$		$\frac{d}{dx}\cot^{-1}u$		
$\frac{d}{dx}\ln u$	$\frac{1}{u}\cdot\frac{du}{dx}$		$\frac{d}{dx}\ln u$		
$\frac{d}{dx}\log_a u = \frac{d}{dx}\frac{\ln u}{\ln a}$	$\frac{1}{u\ln a}\cdot\frac{du}{dx}$		$\frac{d}{dx}\log_a u$		
$\frac{d}{dx}e^u$	$e^u\cdot\frac{du}{dx}$		$\frac{d}{dx}e^u$		
$\frac{d}{dx}a^u$	$a^u\ln a\cdot\frac{du}{dx}$		$\frac{d}{dx}a^u$		