

AP Calculus AB

♪ These are a few of my Favorite Things ♪

If  $y = x^n$   
then  $y' = nx^{n-1}$

If  $y = \cos x$   
then  $y' = -\sin x$

If  $y = \sec x$   
then  $y' = \sec x \cdot \tan x$

If  $y = \cot x$   
then  $y' = -\csc^2 x$

If  $y = \cos^{-1} x$   
then  $y' = \frac{-1}{\sqrt{1-x^2}}$

If  $y = \sec^{-1} x$   
then  $y' = \frac{1}{|x|\sqrt{x^2-1}}$

If  $y = \cot^{-1} x$   
then  $y' = \frac{-1}{1+x^2}$

If  $y = a^x$   
then  $y' = a^x \ln a$

If  $y = \log_b x$   
then  $y' = \frac{1}{x \ln b}$

If  $y = \frac{f(x)}{g(x)}$   
then  $y' = \frac{f'(x) \cdot g(x) - f(x) \cdot g'(x)}{g^2(x)}$

If  $y = \sin x$   
then  $y' = \cos x$

If  $y = \tan x$   
then  $y' = \sec^2 x$

If  $y = \csc x$   
then  $y' = -\csc x \cdot \cot x$

If  $y = \sin^{-1} x$   
then  $y' = \frac{1}{\sqrt{1-x^2}}$

If  $y = \tan^{-1} x$   
then  $y' = \frac{1}{1+x^2}$

If  $y = \csc^{-1} x$   
then  $y' = \frac{-1}{|x|\sqrt{x^2-1}}$

If  $y = e^x$   
then  $y' = e^x$

If  $y = \ln x$   
then  $y' = \frac{1}{x}$

If  $y = f(x) \cdot g(x)$   
then  $y' = f'(x) \cdot g(x) + f(x) \cdot g'(x)$

If  $y = f(g(x))$   
then  $y' = f'(g(x)) \cdot g'(x)$