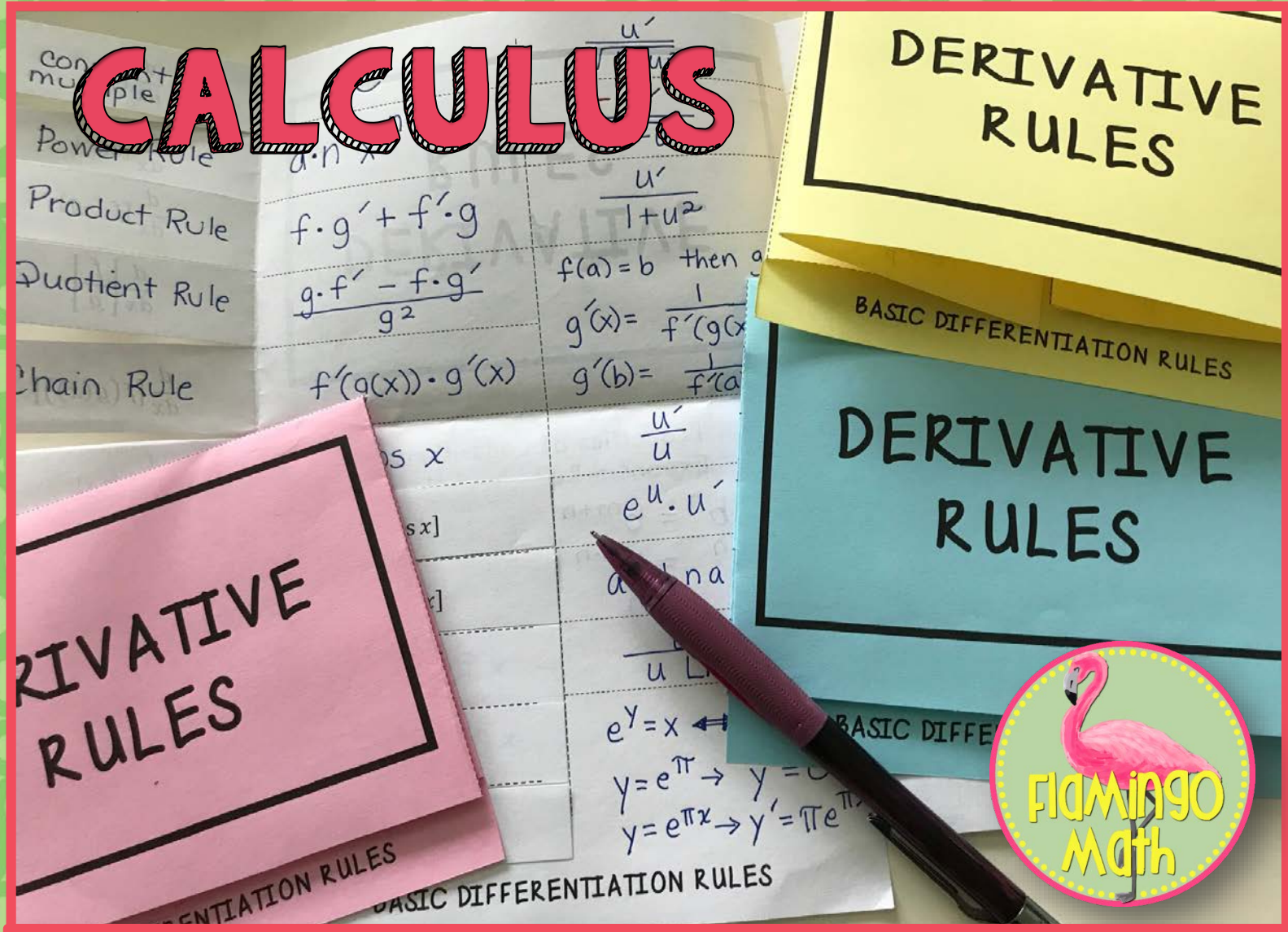


Derivative Rules Foldable®

with Transcendental Functions

FLAMINGO MATH

Thanks for downloading my product!
Be sure to follow me for new products, free items and upcoming sales.

www.teacherspayteachers.com/Store/Jean-Adams
www.flamingomath.com
www.pinterest.com/jeanfaye/

DERIVATIVES FOLDABLE WITH TRANSCENDTAL FUNCTIONS

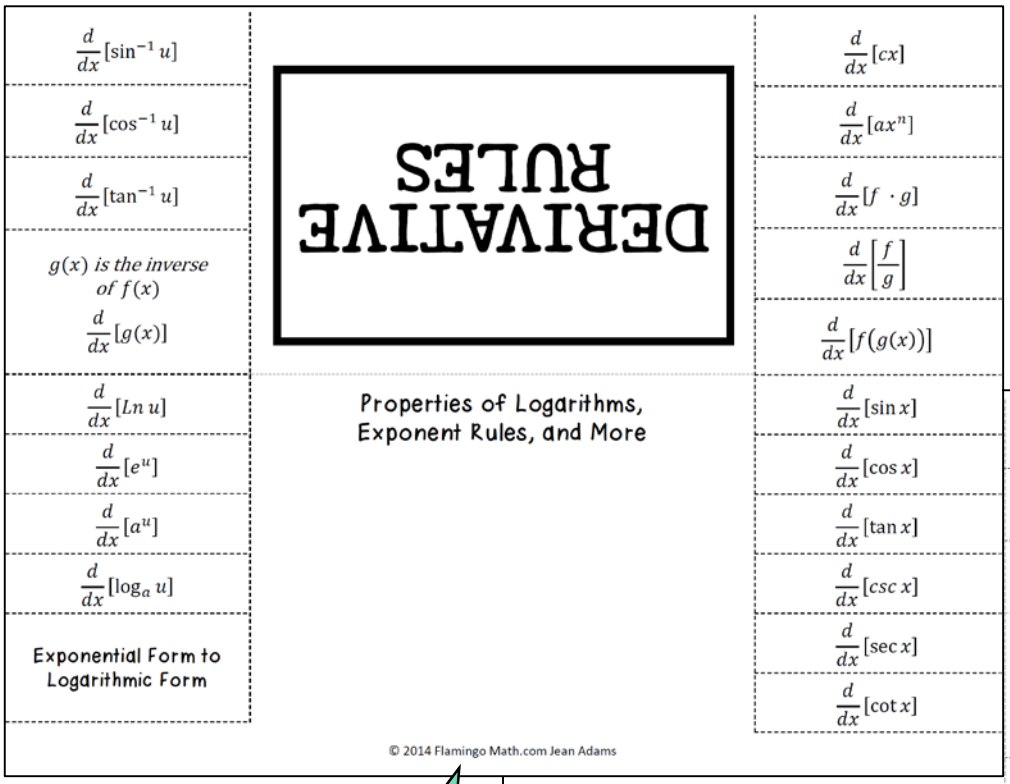
Use this activity is a graphic organizer for Calculus students to review and drill the derivative rules for polynomials, trigonometric and other transcendental functions. There are two types for your needs.

Type 1: is a two-sided stand alone foldable
Type 2: is a single sheet notebook foldable

Making the two-sided Foldable®:
- Copy on card stock for durability.
- **Flip on short side** when copying.
- Have students complete the organizer with their notes or teacher-directed, as necessary.

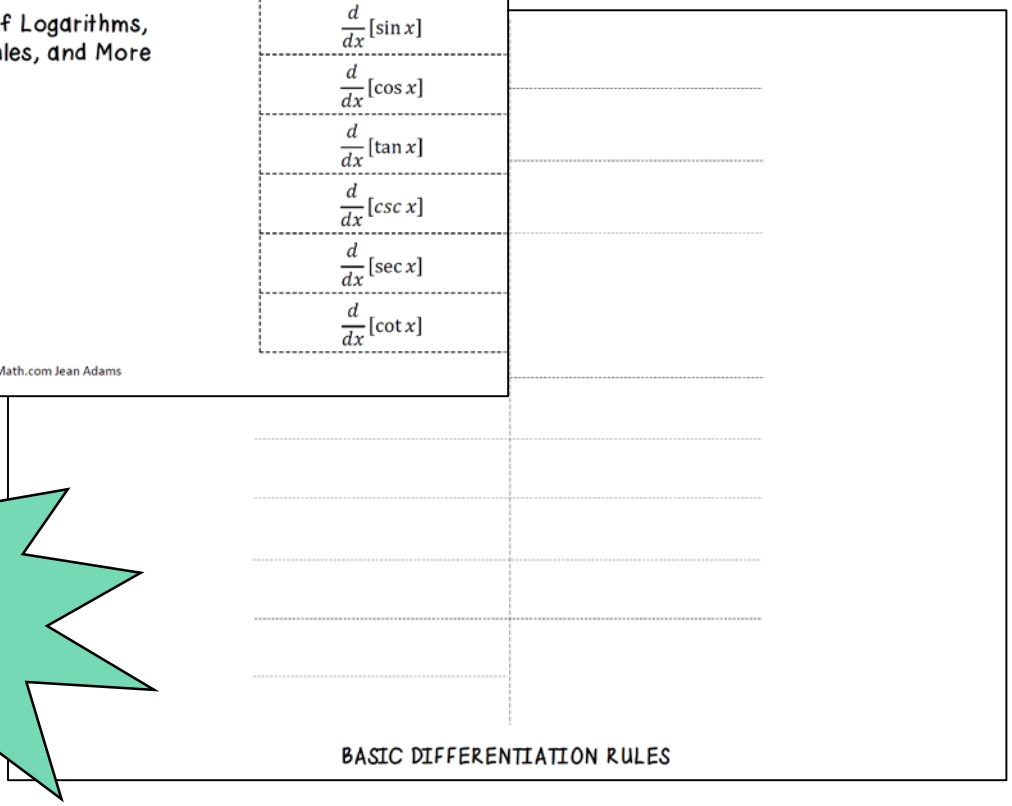
Making the single-sheet notebook Foldable:
- Copy on colorful paper and
- cut around the outside of the foldable
- Place glue along the two tabs where the title reads "Basic Derivative Rules"
- Glue the entire sheet into your notebook.
- Cut up the center line to open the two sides.
- Cut each derivative "flap" in order to write the rule underneath each "door."

You may be interested in purchasing the Differentiability and Continuity Stations Activity.

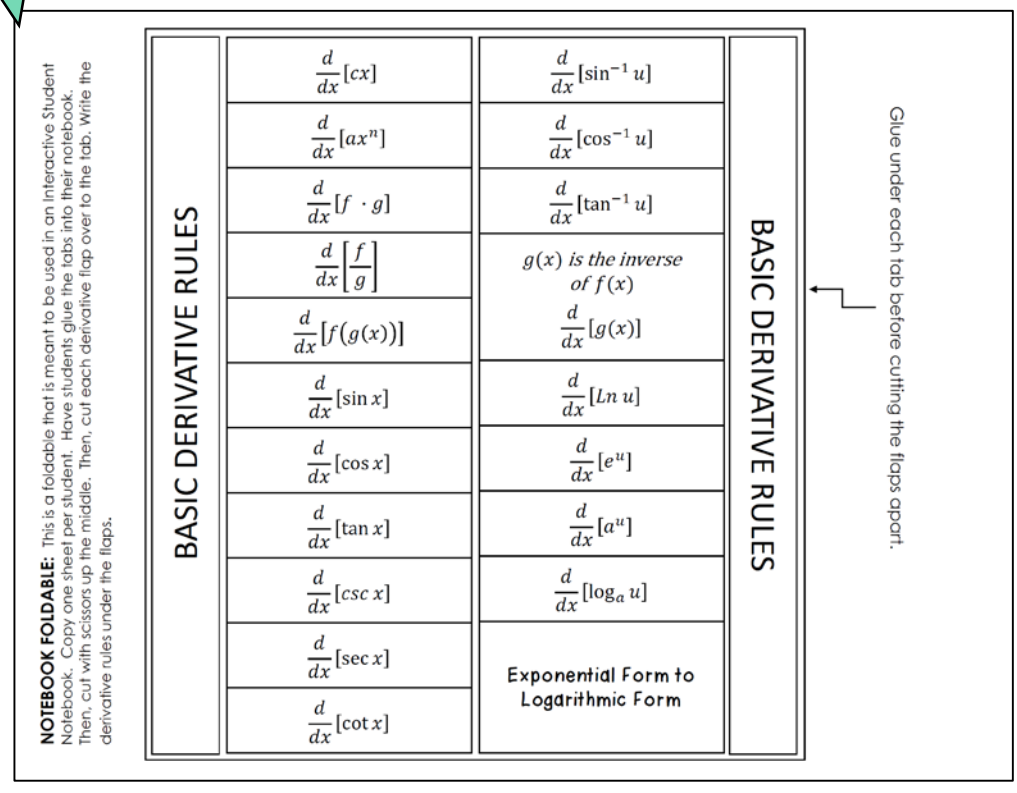


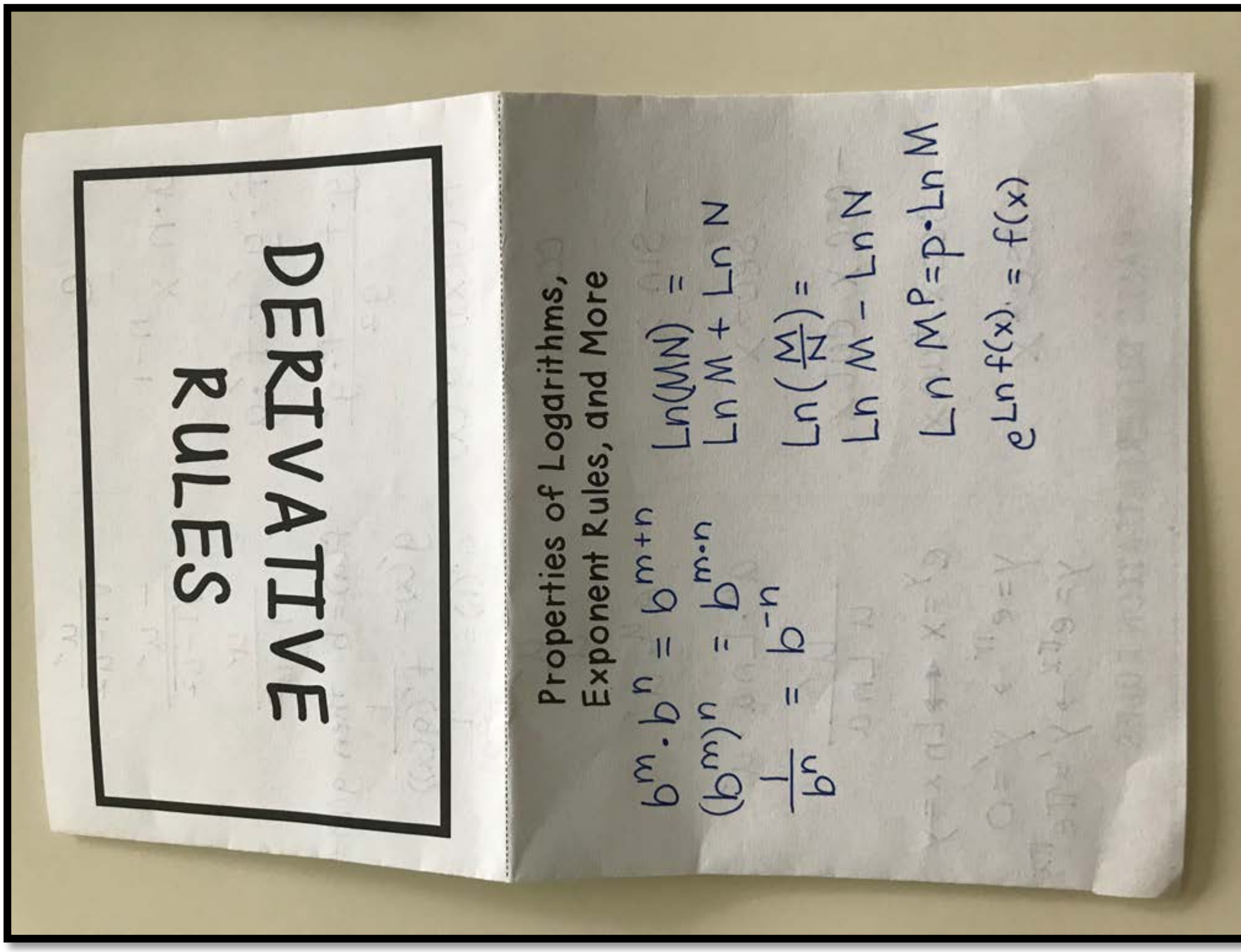
Two-Sided Foldable

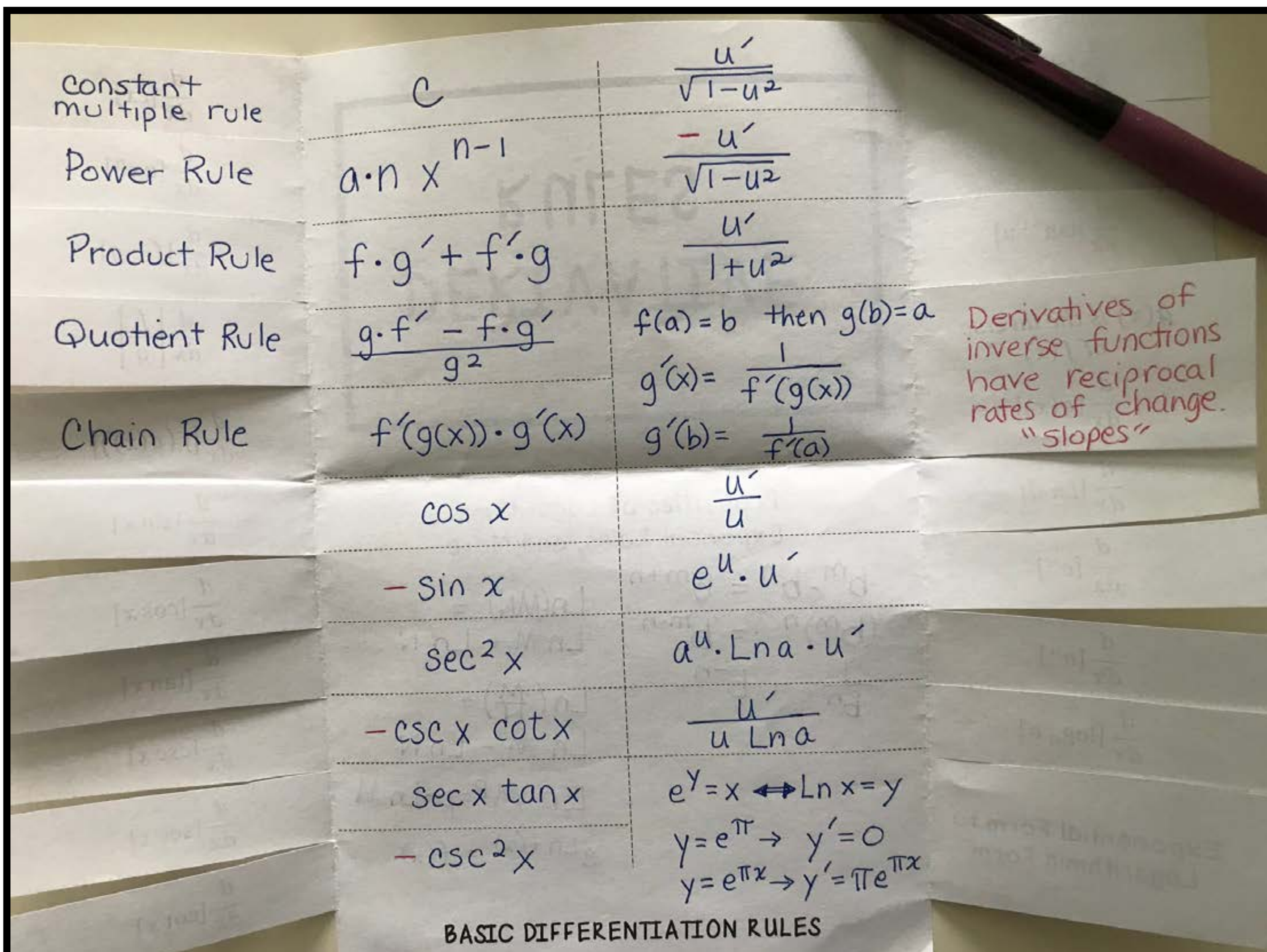
TWO OPTIONS



Notebook Foldable




DERIVATIVE RULES
Properties of Logarithms, Exponent Rules, and More
$b^m \cdot b^n = b^{m+n}$
$(b^m)^n = b^{m \cdot n}$
$\frac{1}{b^n} = b^{-n}$
$Ln(MN) = Ln M + Ln N$
$Ln\left(\frac{M}{N}\right) = Ln M - Ln N$
$Ln M^p = p \cdot Ln M$
$e^{Ln f(x)} = f(x)$


constant multiple rule
c
Power Rule
$a \cdot n\, x^{n-1}$
Product Rule
$f \cdot g' + f' \cdot g$
Quotient Rule
$\frac{g \cdot f' - f \cdot g'}{g^2}$
Chain Rule
$f'(g(x)) \cdot g'(x)$
$\cos x$
$-\sin x$
$\sec^2 x$
$-\csc x \cot x$
$\sec x \tan x$
$-\csc^2 x$
$\frac{u'}{\sqrt{1-u^2}}$
$\frac{-u'}{\sqrt{1-u^2}}$
$\frac{u'}{1+u^2}$
$f(a) = b$ then $g(b) = a$
$g'(x) = \frac{1}{f'(g(x))}$
$g'(b) = \frac{1}{f'(a)}$
Derivatives of inverse functions have reciprocal rates of change. "slopes"
$\frac{u'}{u}$
$e^u \cdot u'$
$a^u \cdot Ln a \cdot u'$
$\frac{u'}{u\, Ln a}$
$e^y = x \Leftrightarrow Ln x = y$
$y = e^{\pi} \rightarrow y' = 0$
$y = e^{\pi x} \rightarrow y' = \pi e^{\pi x}$
BASIC DIFFERENTIATION RULES

$\frac{d}{dx}[\sin^{-1} u]$

$\frac{d}{dx}[\cos^{-1} u]$

$\frac{d}{dx}[\tan^{-1} u]$

$g(x)$ *is the inverse of* $f(x)$

$\frac{d}{dx}[g(x)]$

$\frac{d}{dx}[Ln\, u]$

$\frac{d}{dx}[e^u]$

$\frac{d}{dx}[a^u]$

$\frac{d}{dx}[\log_a u]$

Exponential Form to Logarithmic Form

DERIVATIVE RULES

Properties of Logarithms, Exponent Rules, and More

$\frac{d}{dx}[cx]$

$\frac{d}{dx}[ax^n]$

$\frac{d}{dx}[f \cdot g]$

$\frac{d}{dx}\left[\frac{f}{g}\right]$

$\frac{d}{dx}[f(g(x))]$

$\frac{d}{dx}[\sin x]$

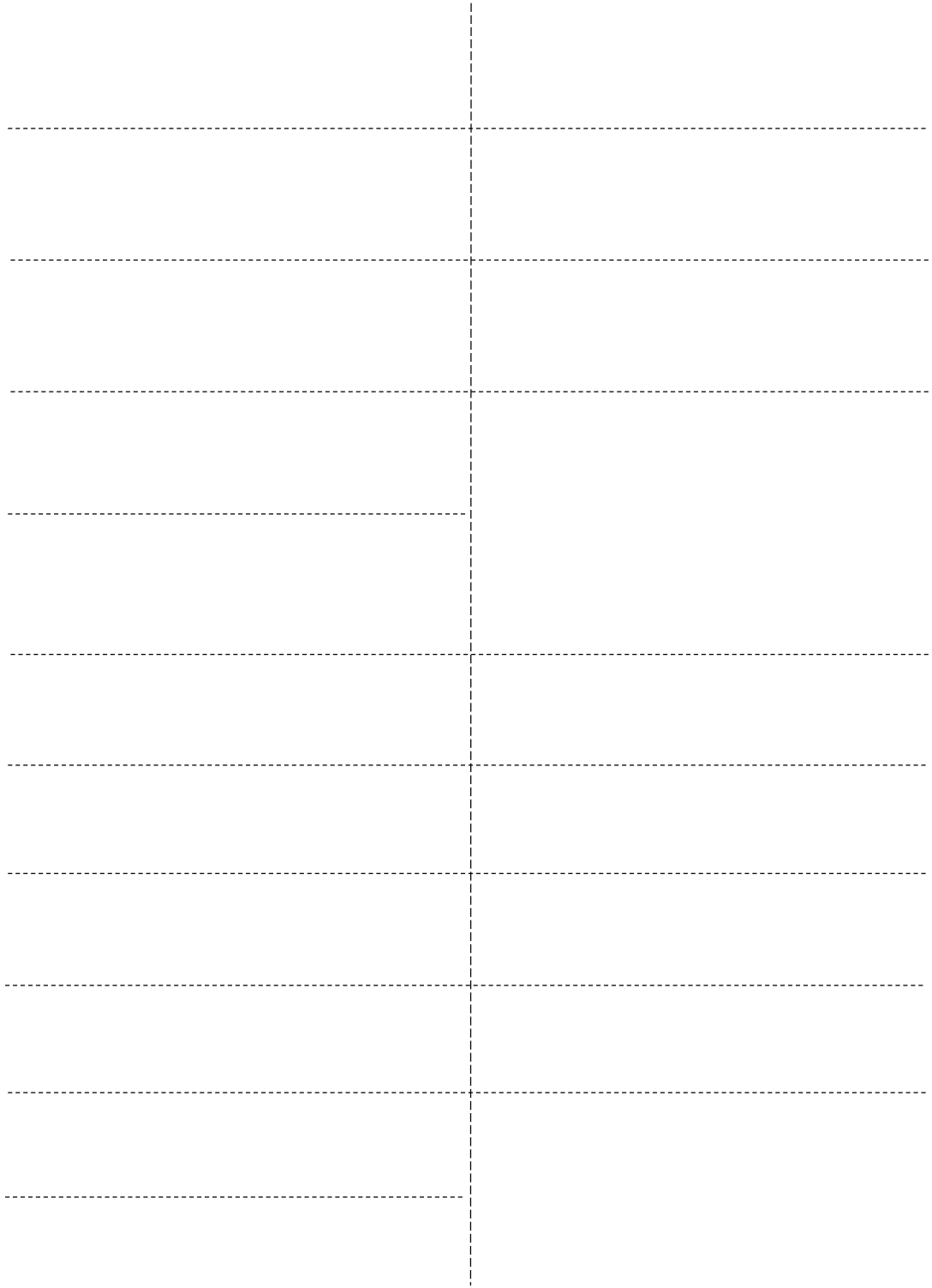
$\frac{d}{dx}[\cos x]$

$\frac{d}{dx}[\tan x]$

$\frac{d}{dx}[csc\, x]$

$\frac{d}{dx}[\sec x]$

$\frac{d}{dx}[\cot x]$



BASIC DIFFERENTIATION RULES

NOTEBOOK FOLDABLE: This is a foldable that is meant to be used in an Interactive Student Notebook. Copy one sheet per student. Have students glue the tabs into their notebook. Then, cut with scissors up the middle. Then, cut each derivative flap over to the tab. Write the derivative rules under the flaps.

BASIC DERIVATIVE RULES

$\frac{d}{dx}[cx]$	$\frac{d}{dx}[\sin^{-1} u]$
$\frac{d}{dx}[ax^n]$	$\frac{d}{dx}[\cos^{-1} u]$
$\frac{d}{dx}[f \cdot g]$	$\frac{d}{dx}[\tan^{-1} u]$
$\frac{d}{dx}\left[\frac{f}{g}\right]$	$g(x)$ *is the inverse of* $f(x)$ $\frac{d}{dx}[g(x)]$
$\frac{d}{dx}[f(g(x))]$	$\frac{d}{dx}[Ln\, u]$
$\frac{d}{dx}[\sin x]$	$\frac{d}{dx}[e^u]$
$\frac{d}{dx}[\cos x]$	$\frac{d}{dx}[a^u]$
$\frac{d}{dx}[\tan x]$	$\frac{d}{dx}[\log_a u]$
$\frac{d}{dx}[\csc x]$	**Exponential Form to Logarithmic Form**
$\frac{d}{dx}[\sec x]$	
$\frac{d}{dx}[\cot x]$	

Glue under each tab before cutting the flaps apart.

BASIC DERIVATIVE RULES

$\frac{d}{dx}[\sin^{-1} u]$

$\frac{d}{dx}[\cos^{-1} u]$

$\frac{d}{dx}[\tan^{-1} u]$

$g(x)$ is the inverse of $f(x)$

$\frac{d}{dx}[g(x)]$

$\frac{d}{dx}[Ln\, u]$

$\frac{d}{dx}[e^u]$

$\frac{d}{dx}[a^u]$

$\frac{d}{dx}[\log_a u]$

Exponential Form to Logarithmic Form

DERIVATIVE RULES

Properties of Logarithms, Exponent Rules, and More

$b^m \cdot b^n = b^{m+n}$

$(b^m)^n = b^{m \cdot n}$

$\frac{1}{b^n} = b^{-n}$

$Ln(MN) = Ln\, M + Ln\, N$

$Ln\left(\frac{M}{N}\right) = Ln\, M - Ln\, N$

$Ln\, M^p = p \cdot Ln\, M$

$e^{Ln\, f(x)} = f(x)$

$\frac{d}{dx}[cx]$

$\frac{d}{dx}[ax^n]$

$\frac{d}{dx}[f \cdot g]$

$\frac{d}{dx}\left[\frac{f}{g}\right]$

$\frac{d}{dx}[f(g(x))]$

$\frac{d}{dx}[\sin x]$

$\frac{d}{dx}[\cos x]$

$\frac{d}{dx}[\tan x]$

$\frac{d}{dx}[\csc x]$

$\frac{d}{dx}[\sec x]$

$\frac{d}{dx}[\cot x]$

constant multiple rule	c	$\frac{u}{\sqrt{1-u^2}}$
Power Rule	$a \cdot n\, x^{n-1}$	$\frac{-u'}{\sqrt{1-u^2}}$
Product Rule	$f \cdot g' + f' \cdot g$	$\frac{u'}{1+u^2}$
Quotient Rule	$\frac{g \cdot f' - f \cdot g'}{g^2}$	$f(a)=b$ then $g(b)=a$
		$g'(x) = \frac{1}{f'(g(x))}$
Chain Rule	$f'(g(x)) \cdot g'(x)$	$g'(b) = \frac{1}{f'(a)}$
	$\cos x$	$\frac{u'}{u}$
	$-\sin x$	$e^u \cdot u'$
	$\sec^2 x$	$a^u \cdot \ln a \cdot u'$
	$-\csc x \cot x$	$\frac{u'}{u \ln a}$
	$\sec x \tan x$	$e^y = x \iff \ln x = y$
	$-\csc^2 x$	$y = e^{\pi} \to y' = 0$
		$y = e^{\pi x} \to y' = \pi e^{\pi x}$

Derivatives of inverse functions have reciprocal rates of change. "slopes"

BASIC DIFFERENTIATION RULES

FLAMINGO MATH

Let's Connect . . .

I have a passion and drive to create rigorous, engaging lessons of the highest quality for teachers and students. My products include guided notes, Foldables,© SMART Board© lessons, games, activities, homework, assessments, and so much more. My resources are focused on three courses for your honors students.

Algebra 2, Pre-Calculus, and Calculus.

Terms of Use