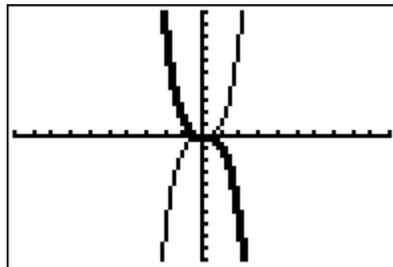
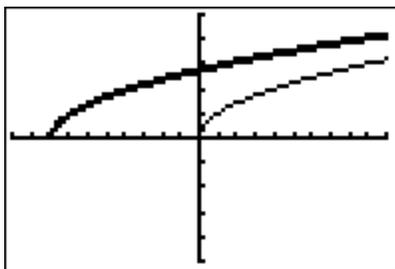


Function Catalogs



T³ Regional – MEGSL Conference
Clayton High School
Clayton, Missouri

November 3, 2007

Pam Burke
Potosi High School
Potosi, Missouri

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FUNCTION CATALOG

REQUIREMENTS:

- Table of Contents (including a sketch of each parent function)
- One 'Function Type' sheet completed for each family of functions
- Eight completed graphs and tables for the transformations of each family of functions
- Folder with brads

FUNCTION TYPE PAGE:

- Complete all information on the 'Function Type' page.
- Don't leave any questions unanswered; if 'none' is the appropriate response, say so.
- Fill in the table of values for points on the parent function and its inverse.
- Draw graphs of the parent function as well as the inverse on the grid on this page.
- **Plot the points carefully and draw the function and inverse in different colors. These graphs are not sketches.**
- Sketch any asymptotes as dashed lines.

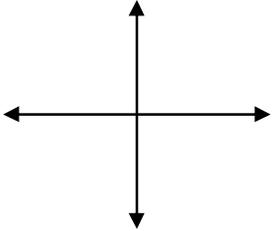
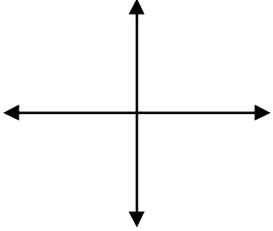
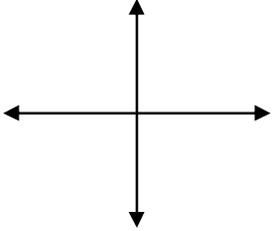
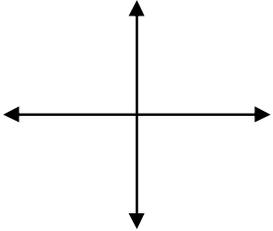
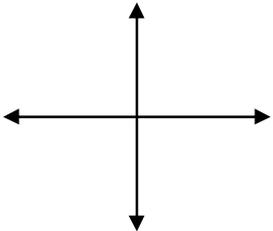
TRANSFORMATION PAGES:

- Fit no more than four transformations on each sheet of graph paper.
- State the function for each transformation.
- Make a table of values for each transformed graph.
- Graph the parent function as well as the particular transformation on each grid. Use one color consistently for the parent function and another color (or colors) for the transformations. Sketch any asymptotes as dashed lines.
- Transformations to be graphed:
 - Horizontal translation/shift
 - Vertical translation/shift
 - Horizontal stretch
 - Horizontal shrink
 - Vertical stretch
 - Vertical shrink
 - Reflection over the y-axis
 - Reflection over the x-axis

NOTES:

- If the inverse is a function, write it in function notation. If the inverse is a relation but not a function, write the equation in any form.
- Use interval notation for the domain and range.
- State all x-and y-intercepts as ordered pairs.
- State asymptotes as equations.
- Describe end behaviors in limit notation and in terms of boundedness.

TABLE OF CONTENTS – PARENT FUNCTIONS

<u>Type</u>	<u>Equation</u>	<u>Sketch</u>
Constant (Linear)	$f(x) = a$ $a = \underline{\hspace{2cm}}$	
Identity (Linear)	$f(x) = x$	
Quadratic	$f(x) = x^2$	
Square Root	$f(x) = \sqrt{x}$	
Absolute Value	$f(x) = x $	

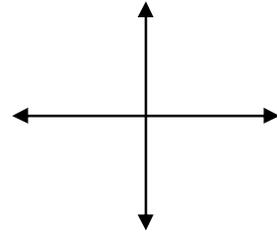
Type

Equation

Sketch

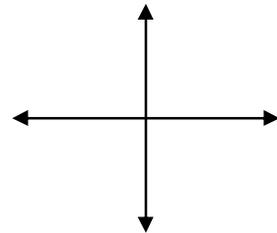
Cubic

$$f(x) = x^3$$



Cube Root

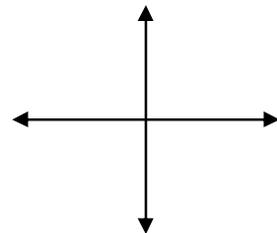
$$f(x) = \sqrt[3]{x}$$



Exponential

$$f(x) = b^x$$

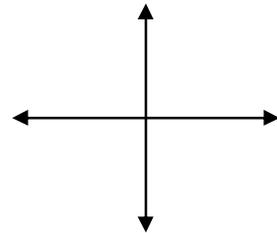
$b = \underline{\hspace{2cm}}$



Logarithmic

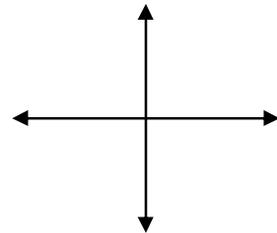
$$f(x) = \log_b x$$

$b = \underline{\hspace{2cm}}$



Reciprocal

$$f(x) = \frac{1}{x}$$



Greatest Integer

$$f(x) = [x]$$

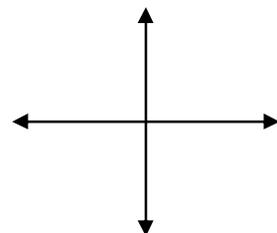
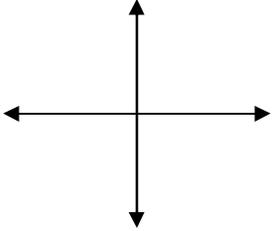
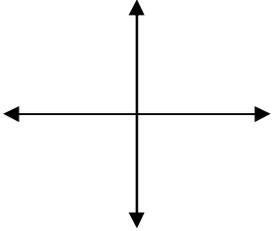


TABLE OF CONTENTS – PARENT FUNCTIONS

<u>Type</u>	<u>Equation</u>	<u>Sketch</u>
Trigonometric	$f(x) = \sin x$	
	$f(x) = \cos x$	
	$f(x) = \tan x$	