Name:____

Date: _____

Name	Numerically	Graphically	Domain & Range	Continuity
constant	$\begin{array}{c c} x & f(x) \\ \hline -2 & \end{array}$	y	domain:	continuous / discontinuous (circle one)
Algebraically		x	range:	Increasing/Decreasing
y = c For example: $y = 2$		•	one to one?	increasing: decreasing:

Verbally: The function whose output is

Intercepts End Behavior		Asymptotes	Extrema
y-intercept:	As $x \to -\infty$, $f(x) \to $	vertical:	absolute maximum value: at
zeros:	As $x \to \infty$, $f(x) \to $	horizontal:	absolute minimum value: at

Name	Numerically	Graphically	Domain & Range	Continuity
identity	$\begin{array}{ c c c c c }\hline x & f(x) \\ \hline -2 & \end{array}$	y 1	domain:	continuous / discontinuous (circle one)
Algebraically		* x	range:	Increasing/Decreasing
y = x			one to one?	increasing: decreasing:
Vorbally. The funct				

Verbally: The function whose output is

Intercepts	End Behavior	Asymptotes	Extrema	
y-intercept: zeros:	As $x \to -\infty$, $f(x) \to $ As $x \to \infty$, $f(x) \to $	vertical:	absolute maximum value: at absolute minimum value: at	

zeros:

absolute minimum value: ____ at __

Name	Numerically	Gı	raphically	Domain & Range	Continuity	
Absolute Value	$\begin{array}{c c} x & f(x) \\ \hline -2 & \end{array}$		1	domain:	continuous / discontinuous (circle one)	
Algebraically		•	<i>x</i>	range:	Increasing/Decreasing	
y = x			•	one to one?	increasing: decreasing:	
Verbally: The function whose output is						
Intercepts	End Behavior		Asymptotes]	Extrema	
<i>y</i> –intercept:	As $x \to -\infty$, $f(x) \to -\infty$		vertical:	absolute maximum v	alue: at	

horizontal:

Name	Numerically	Gi	raphically	Domain & Range	Continuity
Quadratic	$ \begin{array}{c cc} x & f(x) \\ -3 & \\ \hline -2 & \\ \end{array} $	y		domain:	continuous / discontinuous (circle one)
Algebraically	-1		r .	range:	Increasing/Decreasing
$y = x^2$	0 1 2 3	x		one to one?	increasing: decreasing:
Verbally: The funct	tion whose output is				
Intercepts	End Behav	ior	Asymptotes		Extrema
y-intercept:	As $x \to -\infty$, $f(x) \to $ As $x \to \infty$, $f(x) \to $		vertical:	absolute maximum v	value: at
zeros:	As $x \to \infty$, $f(x) \to $		horizontal:	absolute minimum v	ralue: at

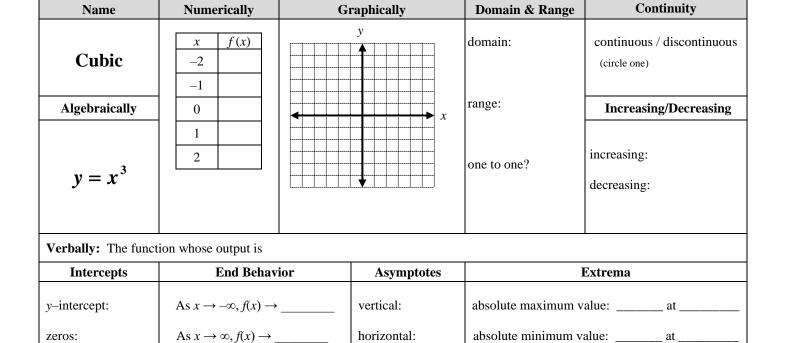
As $x \to \infty$, $f(x) \to$

zeros:

absolute minimum value: _____ at ____

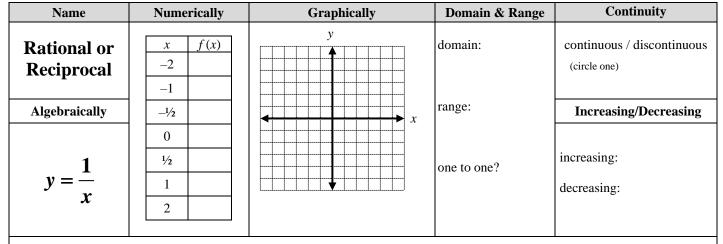
Name	Numerically	Gi	raphically	Domain & Range	Continuity
Square Root	x $f(x)$ -4		y	domain:	continuous / discontinuous (circle one)
Algebraically	-1 0	•	x	range:	Increasing/Decreasing
$y = \sqrt{x}$	1	A		one to one?	increasing: decreasing:
Verbally: The function whose output is					
Intercepts	End Behav	End Behavior Asymptotes]	Extrema
<i>y</i> –intercept:	As $x \to 0$, $f(x) \to 1$		vertical:	absolute maximum v	alue: at

horizontal:



Name	Numerically	Graphically	Domain & Range	Continuity		
Cube Root	x = f(x)	y A	domain:	continuous / discontinuous (circle one)		
Algebraically	0	x	range:	Increasing/Decreasing		
$y = \sqrt[3]{x}$		•	one to one?	increasing: decreasing:		
Verbally: The function whose output is						
Intercepts	End Behav	ior Asymptotes]	Extrema		

Intercepts	End Behavior	Asymptotes	Extrema	
y-intercept: zeros:	As $x \to 0$, $f(x) \to $ As $x \to \infty$, $f(x) \to $	vertical:	absolute maximum value: at absolute minimum value: at	



Verbally: The function whose output is

Intercepts	End Behavior	Asymptotes	Extrema	
y-intercept:	As $x \to -\infty$, $f(x) \to $	vertical:	absolute maximum value: at	
zeros:	As $x \to \infty$, $f(x) \to $	horizontal:	absolute minimum value: at	

zeros:

As $x \to \infty$, $f(x) \to$

absolute minimum value: _____ at ___

Name	Numerically	G	raphically	Domain & Range	Continuity	
Exponential	x $f(x)$	x r		domain:	continuous / discontinuous (circle one)	
Algebraically				range:	Increasing/Decreasing	
$y = e^x$				one to one?	increasing: decreasing:	
Verbally: The function whose output is						
Intercepts	End Behavior Asymptotes]	Extrema		
<i>y</i> –intercept:	As $x \to 0$, $f(x) \to 1$		vertical:	absolute maximum v	alue: at	

horizontal:

Name	Numerically	Gi	raphically	Domain & Range	Continuity	
Logarithmic	x $f(x)$		у А	domain:	continuous / discontinuous (circle one)	
Algebraically			x	range:	Increasing/Decreasing	
$y = \ln x$			one to one?	increasing: decreasing:		
Verbally: The function whose output is						
Intercepts	End Behav	ior	Asymptotes]	Extrema	
y-intercept: zeros:	As $x \to -\infty$, $f(x) \to $ As $x \to \infty$, $f(x) \to $		vertical:	absolute maximum v	alue: at alue: at	

Name	Numerically	Graphically	Domain & Range	Intercepts
an important relation	x $f(x)$	y	domain:	y-intercept: zeros:
Algebraically		x	range:	Zetos.
$x = y^2$		•	one to one?	

Factor completely, if possible, using proper notation.

1.
$$9y^4 - 25x^2$$

2.
$$x^4 - 81$$

3.
$$4x-100x^3$$

4.
$$3x^2 + 12x + 12$$

5.
$$28x^4 + 63x^2$$

6.
$$2x^3 - 20x^2 - 48x$$

7.
$$5x^2 - 13x - 6$$

8.
$$9x^2 + 30x - 24$$

9.
$$x^3 + 216$$

10.
$$64-125x^3$$

11.
$$2x^3 - 3x^2 + 32x - 48$$

12.
$$4x^3 + x^2 - 100x - 25$$

13.
$$x^4 - 5x^2 + 4$$

14.
$$x^2 - 13x - 48$$

15.
$$9x^2 - 12xy + 4y^2$$