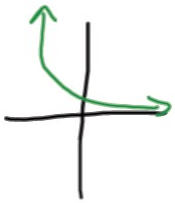
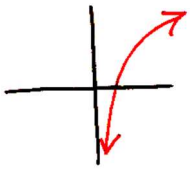
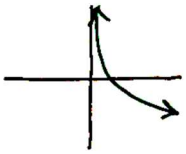
Foundations of Mathematics 12

Name: _____

Chapter 7 – Exponential and Logarithmic Functions

	Chapter 7: Exponential and Logarithmic Functions			
	exponential function $\boldsymbol{y = a(b)^x}$ where $a > 0, b > 0$ and $b \neq 1$		logarithmic function $\boldsymbol{y = a \log_b x}$ where $\boldsymbol{b > 0}$, $\boldsymbol{b \neq 1}$, $\boldsymbol{a \neq 1}$, and $\boldsymbol{a}$ and $\boldsymbol{b}$ are real numbers	
sketch	 increasing $b > 1$	 decreasing $0 < b < 1$	 increasing $a > 0$	 decreasing $a < 0$
# of x-int	0		1 (x-int = 1)	
# of y-int	1 (y-int = a)		0	
End Behaviour	QII to QI		QIV to QI (if $a > 0$) or QI to QIV (if $a < 0$)	
Domain	$\{x \mid x \in R\}$		$\{x \mid x > 0, x \in R\}$	
Range	$\{y \mid y > 0, y \in R\}$		$\{y \mid y \in R\}$	

Modelling Data with a Regression Function (TI-83 Plus)

2nd Y= 1:Plot1 - turn Stat Plot1 ON

STAT 4:ClrList - clear data

STAT 1:Edit - enter data in lists

**for a logarithmic regression, the dependent and independent variables seem 'switched'*

WINDOW - set X_{min}, X_{max}, Y_{min}, Y_{max} to suit data

GRAPH - to create scatter plot

STAT CALC - scroll down to pick type of regression

9:LnReg ($y = a + b \ln x$), **0:ExpReg** ($y = a(b)^x$)

Y= VARS
5:Statistics
EQ 1:RegEQ - to grab your regression equation

GRAPH - to plot regression equation

2nd TRACE - to get info from graph (**1:value**, **2:zero, 5:intersect**)

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