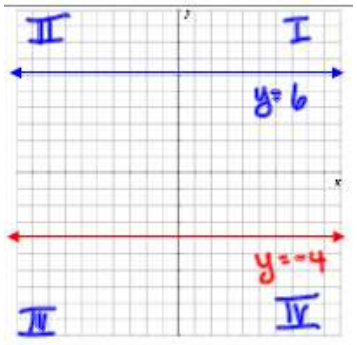
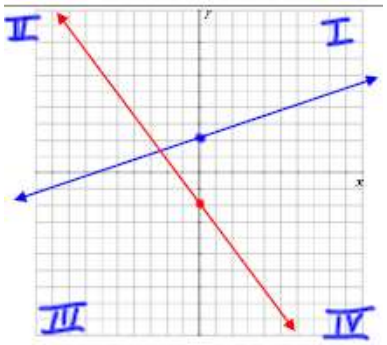
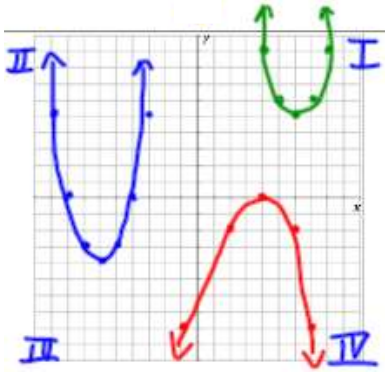
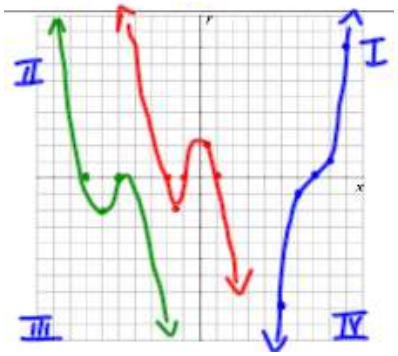
Foundations of Mathematics 12

Name: _____

Chapter 6 – Polynomial Functions

	Polynomial Functions			
	constant $\boldsymbol{y = a}$ $(y = ax^0)$	linear $\boldsymbol{y = ax + b}$	quadratic $\boldsymbol{y = ax^2 + bx + c}$	cubic $\boldsymbol{y = ax^3 + bx^2 + cx + d}$
degree	0	1	2	3
sketch				
# of x-int	0 (except for $y = 0$)	1	0, 1 or 2	1, 2 or 3
# of y-int	1 (y-int = a)	1 (y-int = b)	1 (y-int = c)	1 (y-int = d)
End Behaviour	QII to QI (if a is +ve) or QIII to QIV (if a is -ve)	QIII to QI (if a is +ve) or QII to QIV (if a is -ve)	QII to QI (if a is +ve) or QIII to QIV (if a is -ve)	QIII to QI (if a is +ve) or QII to QIV (if a is -ve)
Domain	$\{x \mid x \in R\}$	$\{x \mid x \in R\}$	$\{x \mid x \in R\}$	$\{x \mid x \in R\}$
Range	$\{y \mid y = a, y \in R\}$	$\{y \mid y \in R\}$	$\{y \mid y \geq min, y \in R\}$ if a is +ve or $\{y \mid y \leq max, y \in R\}$ if a is -ve	$\{y \mid y \in R\}$
# of Turning Points	0	0	1	0 or 2

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
L1 (x) independent variable, L2 (y) dependent variable

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 (**4:LinReg**, **5:QuadReg**, **6:CubicReg**)

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**, **3:minimum**, **4:maximum**, **5:intersect**)