

# Polynomial, Power, Logistic, Rational Functions I

Activity Title	Mathematical Objectives
Europe Population: Using Quadratic and Cubic Models (p. 6)	Determine which function type best fits a data set Use regression to find quadratic and cubic function models Graph polynomial functions Calculate first and second differences of a data set
Female Height and Weight: Using Power Function Models (p. 10)	Determine which function type best fits a scatter plot Use regression to find a power function model Convert from kilograms to pounds Convert from centimeters to inches
Gaining Weight: Using Logistic Function Models (p. 14)	Graph a logistic function Estimate an inflection point from a graph Interpret the real-world meaning of an inflection point
Growing Your Own Money: Working with Rules of Exponents (p. 18)	Multiply a number by a percent Divide one number by another Use rules of exponents to compare two exponential expressions
Growing Your Own Money #2: Working with Rules of Exponents (p. 22)	Multiply a number by a percent Divide one number by another Use rules of exponents to compare two exponential expressions
Make It Real Learning: Working with Function Models (p. 26)	Create a linear model from a verbal description Create a rational function model Evaluate linear and rational functions
Michigan Population: Modeling with Cubic Functions (p. 30)	Determine which function type best fits a data set Use regression to find a cubic function model Use a function model to forecast unknown results
Retail Market Analysis: Working with Rational Functions (p. 34)	Use regression to find a quadratic model Create a rational function Determine the practical domain for a function Evaluate a rational function at a given value
Social Security Concerns: Using Regression and Rational Functions (p. 38)	Use regression to find linear and quadratic models Create and graph a rational function model
Teen Pregnancy: Investigating Cubic Functions (p. 42)	Choose a mathematical model for a given scatter plot Use technology to find the point of intersection of two graphs Use a polynomial model to forecast unknown results