

Polynomial Functions Outline  
MI-2 Fall 1994

I. Definition and Basics

- A. General Form:  $y = f(x) = a_0x^n + a_1x^{n-1} + a_2x^{n-2} + \dots + a_{n-1}x^1 + a_nx^0$
- B. Values for  $a_n$  :
  - 1. Inclusions: integers and rational numbers
  - 2. Exclusions: Irrational numbers, including radicals (and imaginaries),  $e$ ,  $\pi$ , and logarithms

II. Graphs

- A. Relationship between degree and number of bends on graph
- B. Pass-through and bounce points
- C. Wiggles

III. Writing equations given graphs or descriptions thereof

IV. Solving polynomial equations

- A. Synthetic division
- B. Sum, product, and sum of products rule