MTH 30 LECTURE NOTES (Ojakian)
Topic 10: Power Functions

OUTLINE
(References: 3.3)

1. Power Functions

2. End behavior

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1. <u>Power Functions</u>

    (a) $f(x) = kx^p$

    (b) Application. Section 3.3 - Exercise 66

2. <u>End Behavior</u>

    (a) Four cases: Even or Odd exponent, along with Positive or Negative coefficient.

    (b) Language: "goes to infinity" = "approaches infinity" = "$x \to \infty$"

    (c) Arrow Notation and Limit Notation

3. <u>Polynomial Function</u>

    (a) Terms (or Monomials)

    (b) Degree

    (c) Leading Term and Leading Coefficient

    (d) Recall Local Extrema

4. <u>Recall End Behavior</u>

    Just need leading term!

5. <u>Intercepts</u>

    Also called "roots" or "zeroes". Can use factoring to find.

    Theorem 1. *A polynomial of degree n will have at most n intercepts, and at most $n-1$ local extrema.*