

## Class #10: Chain Rule (Math 31)

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1. Goals (Section 3.6)
  - a. Chain Rule
2. Recall function composition
  - a. Given  $f$  and  $g$ , find  $f(g(x))$
  - b. In reverse: Given a function, find  $f$  and  $g$  so that the function =  $f(g(x))$ 
    - i. Examples: Section 3.6: 220 – 224 (just break up)
3. Chain Rule
  - a. Write product rule in newton notation.
  - b. Then chain rule in both notations.
  - c. Examples: Section 3.5: 228 and following.
  - d. Example: Section 3.5: 253
4. Special cases of chain rule:
  - a. Combine chain rule and power rule
  - b. Derivative of exponential