Lecture on Jul. 24th, 2017: Taylor Polynomials

1 Warm-up Practice

- Evaluate $\frac{d}{dx}\cos(\ln 2x)$.

2 Taylor Polynomials

- Definition of higher order derivatives.
- Examples of nth derivative of $\frac{1}{1+x}$, e^x and polynomial functions.
- Example of approximating e^x with polynomials.
- Definitions of Taylor polynomial at 0 and at a.
- Example of using 3rd-degree polynomial to approximate $\sqrt[4]{x}$ at $a = 1$ and use it to approximate $\sqrt[4]{2}$.

3 Basic Concepts

- Definitions of sequence, series.
- Summation notation.
- Definitions of alternating series.