1. Find the $5^{th}$ Maclaurin polynomial for $f(x) = \sinh x$.
2. Find the $6^{th}$ Taylor polynomial for $f(x) = \cosh x$ about $x = 0$.
3. Differentiate the polynomial you found in problem 2.
4. Find the Maclaurin series for $f(x) = \cosh x$.
5. Find the interval of convergence of the series you found in problem 4.