Final Project Team 6

Names

May 2021

Problem

Let f be a three times differentiable function (defined on $\mathbb{R}$ and real-valued) such that f has at least five distinct real zeros. Prove that $f+6f'+12f''+8f'''$ has at least two distinct real zeros.

Hint

Use $g : x \to e^{\alpha x}$

Rolle's Theorem

$$\int_a^b f(x)dx$$