Assignment 19 (11/18)

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Problem 1

Problems 8.2.$(41, 44, 67, 73)$.

Problem 2

Problems 8.3.$(19, 22, 29, 35, 36, 51)$.

Problem 3 (Bonus Problem)

This problem will not be graded. It's a fun problem to try if you want a challenge. Email me your solution if you solve it, or to ask for hints.

(Putnam, 2015) Let $f : \mathbb{R} \to \mathbb{R}$ be a three times differentiable function such that f has at least five distinct real roots. Prove that $f + 6f' + 12f'' + 8f'''$ has at least two distinct real roots.