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MA 504
Fall 2022

Homework 6

Due October 21st on paper at the beginning of class. Please let me know if you have a question or find a mistake.

1. Exercise 18 from page 100.
2. Exercise 1 from page 114.
3. Exercise 3 from page 114.
4. Exercise 6 from page 114.

   Hint: Use the mean value theorem on $[0, x]$ to show that $f(x) \leq xf'(x)$.
5. Let $f\colon \mathbb{R} \to \mathbb{R}$ be differentiable and suppose $f(x) = f(x+1)$ for all x. Prove that f' has infinitely many zeroes.