MATH 3100 – Homework #4

posted September 21, 2022; due by 5 PM on September 28, 2022

Section and exercise numbers correspond to the online notes. Assignments are expected to be **neat** and **stapled**. **Illegible work may not be marked.**

Required problems

1. §1.5: 1(a,c,e,g,i,k,m,o)
2. §1.5: 6
3. §1.6: 5
4. §1.6: 8

   Hint: You may need to use Propositions 1.4.16 and 1.4.17.

5. §1.7: 1
6. §1.7: 3

   Hint: If $r > 1$, show that the hypotheses of Theorem 1.7.3 hold with $f(x) = x^2 - r$ and the closed interval $[0, r]$. This choice of interval doesn't work if $0 < r \leq 1$. (Make sure you understand why!) Can you think of an interval which **does** work?

7. §1.7: 4

   Hint: This is an intermediate value theorem problem in disguise.

Recommended problems (NOT to turn in)

§1.6: 9, 10, 12
§1.7: 2, 5, 6