

MATH 3100 – Homework #6
posted October 19, 2022; due by 5 PM on October 26, 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. §2.3: 2
2. §2.3: 3(b,c,f,g)
3. §2.3: 9
4. §2.3: 11
5. Suppose $\sum_{k=0}^{\infty} a_k x^k$ is a power series whose DOC has least upper bound R , where $0 < R < \infty$. Show that $\sum_{k=0}^{\infty} a_k x^k$ converges when $|x| < R$ and diverges when $|x| > R$.

This completes the proof of the theorem from class characterizing the possible forms of the DOC. Needless to say, you should not assume that theorem in your proof!

6. §2.4: 1(b,e,f,h,k,l)
7. §2.4: 2
8. §2.4: 3
9. §2.4: 5
10. §2.4: 6

Recommended problems

§2.3: 3(a,d,e), 7, 10
§2.4: 1(a,c,d,g,i,j), 4