

Comprehensive final examination

- ▶ 12:30–2:30 on Friday afternoon, December 8, in this room.
- ▶ Please bring your own paper to work on.

What did we cover this semester?

Chapter I: Sections 1–2 and 4–8

Chapter II: Sections 2–7

Chapter III: Sections 1–3

Chapter IV: Sections 1–4

Chapter V: Sections 1 and 3–4

Chapter VI: Section 1

Chapter VII: Sections 1 and 3

Announcements / reminders

- ▶ Extra office hours this week: Wednesday and Thursday afternoon, 2:00–3:55.
- ▶ Some old exams and solutions are **posted**.
- ▶ Please complete the **course evaluation**.
Thanks if you have already done so.

Some review exercises

1. Determine the minimum value of $|\sin(\frac{\pi}{2} + iy)|$ when y runs over all real numbers.
2. Suppose $w = \frac{1+z}{1-z}$. Determine the image in the w -plane of $\{z : |z| < 1\}$, the unit disk in the z -plane.
3. What are all the possible values of the line integral $\int_C \frac{1}{z^2 + 1} dz$ when C varies over all possible closed paths?
4. Can you find a rational function f with the property that the Taylor series of f with center 2 has radius of convergence equal to 3 and the Taylor series of f with center -2 has radius of convergence equal to 1?