

The goal of this examination is to demonstrate that you know the main concepts and theorems of the course.

1. For each of the following mathematicians, state a theorem from this course named for that person.



Jacques Hadamard
(1865–1963)



Johan Jensen
(1859–1925)



G. Mittag-Leffler
(1846–1927)



Émile Picard
(1856–1941)



Carl Runge
(1856–1927)



Karl Weierstrass
(1815–1897)

2. Define the genus and the order of an entire function. Give a concrete example of an entire function whose genus is different from its order.
3. Define the notion of analytic continuation of a function element along a curve. State the monodromy theorem.
4. State three properties of a domain in \mathbb{C} each of which is equivalent to simple connectivity of the domain.
5. For *one* of the following, make a sketch of what the output of the Maple command should be.
 - (a) `plot(GAMMA(x), x=-3..3, y=-10..10);`
 - (b) `plot(Zeta(x), x=-3..3, y=-10..10);`
6. What is your favorite theorem from this course? Why?