Homework 1 for Math 131AH Honors Analysis

Burt Totaro

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Due on Tuesday, September 27.

Rudin, p. 21: 1, 2.

(3) (Unique Factorization Theorem) Show that every integer $n > 1$ can be written as a product of prime numbers, and that the expression is unique up to the order of the factors.

You may use the fact that if a prime number p divides the product of two integers ab, then either p divides a or p divides b.

(4) (Optional) Show that every positive rational number can be written as a quotient of products of factorials of (not necessarily distinct) primes.