

Topics Covered in Math104b Winter 2009

1. Primitive roots
2. Characters
3. Gauss sums
4. Quadratic reciprocity
5. Continued fractions
6. Pell's equation
7. Transcendental numbers and Liouville's theorem
8. The transcendence of e .
9. Distribution of primes and Chebyshev's theorem.
10. Reimann zeta function.
11. Euler's computation of $\zeta(2n)$ for $n \in \mathbb{Z}, n > 0$.
12. Newton's formulas.
13. Partitions and Euler's pentagonal number theorem.