

MCS 425 Exercise Set #3 — Spring Semester, 2008

Sec 3.13, exercises 12, 13, 25.

Exercise F Show that 2 is a quadratic residue mod 107. (Note 107 is prime.) Find the square roots of 2 in modulus 107.

Exercise G Show that 21 is a quadratic residue mod 37. (Note 37 is prime.) Find the square roots of 21 in modulus 37.

Exercise H The integer 1260 factors as $2^2 3^2 5 \cdot 7$. Compute $\varphi(1260)$ and $\lambda(1260)$.

Exercise I What is the smallest possible value of $\varphi(n) / n$ for any integer n with $2 \leq n \leq 10000$. For what value(s) of n is this minimum attained?