

Math 335 HW 7 - Due March 19, 2004

1. Let $\nu(n)$ be the number of positive divisors of n , and let $\sigma(n)$ be the sum of the positive divisors of n . So $\nu(6) = 4$ and $\sigma(12) = 28$.

(a) Prove that $\sum_{d|n} \mu(d)\nu(n/d) = 1$ for all n .

(b) Prove that $\sum_{d|n} \mu(d)\sigma(n/d) = n$ for all n .

2. Problem 5.14 of the text.
3. Problem 5.15 of the text.
4. Problem 5.16 of the text.
5. Problem 5.17 of the text.
6. Problem 5.30 of the text.
7. Is 5123 a quadratic residue mod 7901? (You may assume that 7901 is prime.)