Präsenzübungen zu
Vertiefung Elementare Zahlentheorie

WS 2010/2011, Blatt 2

Exercise 5. Prove: if the integer $n > 1$ is not prime, then it has a prime divisor p with $p \leq \sqrt{n}$.

Exercise 6. Find the prime factor decomposition of 72, of 480, of 7950, and of 111111.

Exercise 7. Let a, b and d be integers with d odd. Show: If $d \mid a + b$ and $d \mid a - b$, then $d \mid \gcd(a, b)$.

Exercise 8. For the following linear equations, determine all integer solutions:

$$(a) \quad 14x + 34y = 90, \quad (b) \quad 14x + 35y = 91, \quad (c) \quad 14x + 36y = 93.$$