

MATH 321: HOMEWORK 3
DUE FRIDAY, FEB 5 BY 11:00PM

Problem 1. Suppose a and b are positive integers and let $b = aq + r$ be the Euclidean division for b by a . (That is, q and r are the unique integers with $0 \leq r < a$ which make that equation true.) Show that $\gcd(b, a) = \gcd(a, r)$, where \gcd denotes the greatest common divisor.

Problem 2. Do Exercise 4.1 from the textbook (page 38).

Problem 3. Do Exercise 4.3 from the textbook (page 38).

Problem 4. Do Exercise 4.7 from the textbook (page 38).

Problem 5. Do Exercise 4.11 from the textbook (page 38).

Problem 6. Do Exercise 4.14 from the textbook (page 38).

Problem 7. Do Exercise 4.15 from the textbook (page 39).