Intro to Abstract Mathematics
Spring 2020

Assignment 9.1
Due April 8

Exercise 1. Use the division algorithm to (finally!) prove that $n \in \mathbb{Z}$ is odd if and only if $n = 2k + 1$ for some $k \in \mathbb{Z}$. [*Suggestion:* What are the possible remainders after division by 2?]

Exercise 2. Let $a, b \in \mathbb{N}^+$, $d = \gcd(a, b)$, and write $a = dm$ and $b = dn$ for some $m, n \in \mathbb{N}^+$. Prove that $\gcd(m, n) = 1$. [*Suggestion:* See exercise 7.2.2.]