Introduction to Abstract Mathematics
Spring 2017

Assignment 7.2
Due March 3

Exercise 1. For each pair a, b, find $\gcd(a, b)$ as well as x and y so that $\gcd(x, y) = xa + yb$.

a. 14, 23

b. 130, 150

c. 34, 144

Exercise 2. Let $p, q \in \mathbb{N}$ be distinct primes. Prove that there exist $x, y \in \mathbb{Z}$ so that $xp + yq = 1$.

Exercise 3. Let F_n denote the nth Fibonacci number. Prove that for any $a, b \in \mathbb{N}$, $F_{\gcd(a,b)}$ divides $\gcd(F_a, F_b)$. [*Suggestion:*. Use exercise 5.1.3.]