INTRO TO ABSTRACT MATHEMATICS
SPRING 2020

ASSIGNMENT 8.2
DUE APRIL 1

Exercise 1. Use Bézout's Lemma to prove Euclid's Lemma: for all $a, b, c \in \mathbb{N}$, if $a|bc$ and $\gcd(a, b) = 1$, then $a|c$. [*Suggestion:* Write $1 = xa + yb$, then multiply through by c.]

Exercise 2. For each pair $\{a, b\}$, compute $\gcd(a, b)$ and find $x, y \in \mathbb{Z}$ so that $\gcd(a, b) = xa + yb$.

a. $\{36, 210\}$ **b.** $\{105, 165\}$ **c.** $\{55, 89\}$