

QUIZ 1, VERSION B, MATH103A, SUMMER 2021

1. (5 points) Carefully state Euclid's lemma.
2. (5 points) Find a solution of $[11]_{36}[x]_{36} = [1]_{36}$.
3. (10 points) Find integers x and y such that $\gcd(629, 703) = 629x + 703y$.
4. (5 points) Suppose m and n are positive integers, and $m|n$. Prove that $f : \mathbb{Z}_n \rightarrow \mathbb{Z}_m, f([x]_n) = [x]_m$ is a well-defined function.
5. (5 points) Prove that $\gcd(11n + 2, 5n + 1) = 1$ for every integer n . (Hint. Use the idea of Euclid's algorithm.)