

Assignment 1, due January 13

Problem 1

Find $\text{GCD}(2352, 45)$ and $\text{LCM}(2352, 45)$.

Problem 2

Prove that if $a|b$ and $a|(b+c)$, then $a|\text{GCD}(b, c)$.

Problem 3

What are the possible remainders when a perfect square is divided by 7?

Problem 4

Find a pair of integers u, v such that $\text{GCD}(1100, 121) = 1100u + 121v$. Is the pair unique?

Problem 5

Find all the integer solutions of the equation

$$15x + 25y = 100.$$