Number Theory Quiz I

RDB

July 19, 2021

Problem 1 How many 1's are there in the binary (base 2) expansion of 56?

Problem 2 Use the Euclidean algorithm to show that $\gcd(10, 7) = 1$ and find integers (x_0, y_0) such that $10x_0 + 7y_0 = 1$.

Problem 3 What is the smallest positive integer x such that $10x + 7y = 1$ for some integer y? [You just found a particular solution in the previous question.]