Problem Set 5

February 23, 2026

Problem 1. Let p be a prime number, and let $ax \equiv b \pmod{p}$ be a linear congruent equation with $a \not\equiv 0 \pmod{p}$. Prove that the linear congruent equation has exactly one solution.

Problem 2. Solve the congruent equation

$$x^{39} \equiv 3 \pmod{13}.$$