

Problem Set 4

February 16, 2026

Problem 1. Find the factorization for 54. Then use the factorization to find $\text{ord}_2(54)$ and $\text{ord}_5(54)$.

Problem 2. Suppose that

$$ac \equiv bc \pmod{m}$$

and also **assume** that $\text{gcd}(c, m) = 1$. Prove that

$$a \equiv b \pmod{m}.$$