

MATH 113: DISCRETE STRUCTURES
READING QUESTIONS FOR MONDAY WEEK 12

Reading assignment. *DM:EB §6.8.*

Problem 1. Show that division by a nonzero number cannot always be carried out in the mod 6 number system, *i.e.*, find $a \in \mathbb{Z}$ such that $a \not\equiv 0 \pmod{6}$ and for which there is no $b \in \mathbb{Z}$ such that $ab \equiv 1 \pmod{6}$. Generalize your example to every composite modulus.

Problem 2. Compute $\bar{1}/\bar{53}$ modulo 234527.