

## Math 206 — Proof techniques

**Problem 1.** Let  $a, b, c \in \mathbb{Z}$  with  $a, b \neq 0$ . Prove that if  $a \mid b$  and  $b \mid c$ , then  $a \mid c$ .

**Problem 2.** Give a proof by contradiction of the following statement. “There is not a smallest positive rational number.”