Rec 8/27

Tuesday, August 27, 2019 11:31

Homework

↳ mailbox #10, 1PM

↳ ground floor of math tower

↳ 700 Math tower

1.2.E12: Show if S is a finite semigroup where both cancellation laws hold then S is a group.

goal

① Show that $ax=b$, $ya=b$ are solvable $\forall a,b \in S$.

② if the above holds, S is a group.

① $\varphi_a : S \to S$, $x \mapsto ax$ $\qquad$ $\psi_a : S \to S$, $y \mapsto ya$ are injective. (bc cancellation laws hold)

② Done...

1.3.E4 is $(\mathbb{Q}, +) \cong (\mathbb{Z}, +)$? No.

1.4.E3 - G a gp where $x^2 = e \ \forall x \in G$, show G is abelian.

$$xy = (xy)^{-1} = y^{-1}x^{-1} = yx$$

- what about $x^3 = e$? No (Heisenberg group).

1.5.E1