

Instructions. Write all answers clearly on one piece of paper, and put all group members' names on the top of the paper. If you talk, you must do so **very quietly!**

1. When is the set $\{1, 2, \dots, n-1\}$ a group under multiplication mod n ?
2. (True/False) Sometimes a group has more than one identity element.
3. (True/False) Sometimes a group element has more than one inverse.
4. How do we write the result of the binary operation of a and the inverse of b in an additive group? What about in a multiplicative group?
5. What are the differences between $M(2, \mathbb{R})$ (2×2 real matrices), $GL(2, \mathbb{R})$, and $SL(2, \mathbb{R})$?