

Day 14 homework - Assigned 2/17 and due 2/28

Starred problems below are extra-credit for undergraduates and required for graduate students.

1. Show that if $n \geq 3$, then $U(2^n)$ isn't cyclic. (As in the example in class, find two different elements of order 2.)
2. Let G be a group whose only proper subgroup is $\{e\}$.
 - (a) Show that G is cyclic.
 - (b) Show that G is finite.
 - (c) Use Theorem 4.3 to conclude that the order of G must be a prime number.