

## Math 331: Pop Quiz

Find examples for all of the following. Your examples should be mathematical objects that are familiar to you. Explain why your examples are valid. The more examples you can come up with the better.

1. A set with a binary operation that is not a group.
2. An abelian group.
3. A group that is not abelian.
4. A group that is not a ring.
5. A ring that is not commutative.  
(By this we mean that the multiplicative operation is not commutative.)
6. A ring that is not a field.