MATH 475. SPRING 2016. HOMEWORK 5.

1. Exercise 20 from Chapter 19.
2. Exercise 21 from Chapter 19.
3. Exercise 22 from Chapter 19.
4. Exercise 26 from Chapter 19.
5. For every prime number $p \leq 13$, find $a$ such that
   
   $a^2 \equiv -1 \mod p$

   or prove that $a$ does not exist. Show that the theorem from Exercise 27 in
   Chapter 19 holds for any prime number $p \leq 13$.
7. Exercise 3 from Chapter 21.
8. Exercise 4 from Chapter 21.
9. Design a lesson plan (1 page of text plus illustrations) introducing the
   concept of a group using patterns on pre-Columbian ceramics.