

# Homework #2 for MATH 5345H: Introduction to Topology

September 9, 2013

**Due Date:** Monday 16 September in class.

1. Let  $A$  be a set, and write  $P(A)$  for the *power set* of  $A$ ;

$$P(A) = \{S \mid S \subseteq A\}$$

Assuming that  $A$  has  $n$  elements, show that  $P(A)$  has  $2^n$  elements.

Also do these problems from Munkres' *Topology*:

- Munkres ch.1, §2, # 1, 4.
- Munkres ch.1, §3, # 1, 4, 11.
- Munkres ch.1, §6, # 5.