

MATH 109, SPRING 2018

MATHEMATICAL REASONING , HW 2

Due Tuesday April 17th by 10AM in Roman Kitsela's box

From Hammack's Book of Proof:

- Exercises 1.3 (A): 6
- Exercises 1.3 (B): 10
- Exercises 1.3 (C): 16
- Exercises 1.4 (A): 2, 12
- Exercises 1.4 (B): 18, 20
- Exercises 1.5 (-): 4, 6, 8
- Exercises 1.6 (-): 2, 4, 6
- Exercises 1.7 (-): 8

Problem I. Recall that the binomial coefficient $\binom{n}{m}$ is the number of ways one can choose m elements out of n elements. Give a combinatorial argument explaining the relation

$$\binom{n}{0} + \binom{n}{1} + \binom{n}{2} + \cdots + \binom{n}{n} = 2^n.$$