

Math 300 – Homework Set 7

Due Thursday, April 17

1. Please read Sections 6.1-6.5 in the book.
2. From Chapter 4: # 26
3. How many ways are there to form a team of baseball players from our class of 31 people...
 - (a) when you do care which position each player plays?
 - (b) when you don't care which position each player plays?(Recall that there are 9 players on a baseball team)

4. Using the binomial theorem or otherwise, prove the following identity

$$\sum_{i=0}^n \binom{n}{i} = 2^n$$

5. After doing some experimentation with small values of n , guess and then prove an identity for

$$\sum_{i=0}^n (-1)^i \binom{n}{i}$$

6. From Chapter 6: # 1-4; 6, 8, 15, 34, 35, 41
7. From Chapter 6: # 38