MATH 113: DISCRETE STRUCTURES
READING QUESTIONS FOR MONDAY WEEK 3

Reading assignment. *DM:EB* §§1.7, 1.8

Problem 1. Do some basic algebra to check that

$$n(n-1)(n-2)\cdots(n-k+1) = \frac{n!}{(n-k)!}$$

as long as $1 \leq k \leq n$. Does the formula on the left-hand side make sense when $k > n$? What about the formula on the right-hand side?

Problem 2. 1.8.2 from *DM:EB*

Question 3. Give both algebraic and combinatorial arguments proving that $\binom{n}{1} = n = \binom{n}{n-1}$.