

Combinatorics Homework

1. Find all possible values of k such that

$$\frac{(2k)!}{(2k-1)!} = \frac{(k+6)!}{(k+5)!}$$

2. Simplify $\frac{(x^2-4)!}{(x-2)(x^2-5)!}$

3. How many 5-digit numbers can be formed with only odd numbered digits? How many of these numbers are bigger than 70,000?