CM1103 Week 8: Exercises 3 – Counting

Optional:

13. (Pascal's Identity) Let $n \geq k \geq 1$, to show that
$$C(n + 1, k) = C(n, k - 1) + C(n, k)$$

14. Let $n \geq 1$, to show that
$$C(n, 0) + C(n, 1) + C(n, 2) + \cdots + C(n, n) = 2^n$$