CSE 3101: DESIGN AND ANALYSIS OF ALGORITHMS Assignment 3 Do not submit - solutions will be posted soon

## Notes:

- Feel free to refer to, and use any facts from the textbook.
- Please try to solve the problems before looking at the solutions.
- For each question, you must prove that your algorithm is correct, unless otherwise stated. Also, when you are asked to design an algorithm, you get full credit only if you produce the best possible algorithm (in terms of asymptotic running time).

## **Problems:**

1. Compute the exact sum

$$\sum_{i=1}^{n} \sum_{j=1}^{n} (i-j)^2$$

- 2. Solve problem 261 in the PoA book.
- 3. Solve problem 254 in the PoA book.
- 4. Solve problem 537 in the PoA book.
- 5. Solve problem 544 in the PoA book.
- 6. Solve problem 23 on page 250 (Supp 53) of the PoA book.