CPS 130 Homework 2
Growth of Functions

- due Mon May 20th -

Write and justify your answers in the space provided.[1]

1. (CLRS 2.2-4) How can we modify almost any algorithm to have a good best-case running time?

2. (CLRS 3.1-3) Explain why the statement 'The running time of algorithm A is at least $O(n^2)$' is content free.

3. CLRS 2-4 (The inversion problem).

[1]Collaboration is allowed, even encouraged, provided that the names of the collaborators are listed along with the solutions. Students must write up the solutions on their own.

4. (part of CLRS 3-3) Order the following expressions by their asymptotic growth and **justify your answer.**

$$2^n, n!, (\log n)!, n^3, e^n, 2^{\log_2 n}, n \log n, 2^{2^n}, n^{\log \log n}$$