CMSC 441
Homework 3

Reading Assignment:

- Listen to Camille Saint-Saens' Danse Macabre.
- Read Chapters 2 & 3, and section 4.3 of Chapter 4 of text

Homework:

1) Exercise 2.1-1, page 22

2) Exercise 2.1-2, page 22

3) Exercise 2.2-1, page 29

4) Exercise 2.3-1, page 37

5) For the two functions $(n-1)!$ and $n!$, indicate whether the first function has a lower, same, or higher asymptotic growth than the latter. Explain your answer.

6) Determine the asymptotic time efficiency of the following algorithm::

Algorithm *GE* (**A[0..n-1,0..n]**)
//Input: An $n \times (n+1)$ matrix **A[0..n-1,0..n]** of reals
for i ← 0 **to** n-2 **do**
  for j ← i+1 **to** n-1 **do**
    for k ← i **to** n **do**
      A[j,k]←A[j,k] – A[i,k]*A[j,i]/A[i,i]

Be sure to explain how you got your answer.