

Homework 1

Due: Thursday, 09/05/13 11:59pm

1. In this problem we want to investigate the efficiency of an algorithm in terms of its work. Complete the following table for $n = 10, 102, 103, 104, 105$. Some numbers may be too large to work with so just enter ∞ for those. Use the table to order the growth rates ($n, n^2, 2n, n^3, n \log_2 n, n!, \log_{10} n$ and $4n$) from slowest growing to fastest growing for large n .

n	n^2	$2n$	n^3	$n \log_2 n$	$n!$	$\log_{10} n$	$4n$
10							
102							
103							
105							

2. Consider the list

$\{15, 3, 5, 29, 12\}$

Write out all steps for completing the Selection Sort algorithm to sort the list in ascending order.