LAB-2 EVALUATION PROBLEMS

1. Suppose we are comparing implementations of insertion sort and merge sort on the same machine. For inputs of size n, insertion sort does $8n^2$ comparisons, while merge sort does $64n \lg n$ comparisons.

   Write a program to display all values of n such that insertion sort beats merge sort.

2. For each function $f(n)$ and time t in the following table, determine the largest size n of a problem that can be solved in time t, assuming that the computer that runs an algorithm to solve the problem takes $f(n)$ microseconds.

	1 second	1 minute	1 hour	1 day	1 month	1 year	1 century
$\lg n$							
$\sqrt{n}$							
n							
$n \lg n$							
n^2							
n^3							
2^n							
$n!$							