COMP 301 Analysis of Algorithms
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HW 1

Submit your codes and answers to Canvas for the problems given below.

1. What is the smallest value of n such that an algorithm whose running time is $100n^2$ runs faster than an algorithm whose running time is 2^n on the same machine? Write a simple Java code that tries different values for n and solves this problem.

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 algorithm to solve the problem takes $f(n)$ microseconds. Write simple Java codes for $n \log n$ and $n!$, which try different values for n and solves this problem. Assume that a year contains 365 days and a century 36524 days.

	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							
$n!$							