1-1 Comparison of running times.
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.

	1 second	1 minute	1 hour	1 day	1 month	1 year	1 century
$\lg n$	2^{10^6}	$2^{6\times10^7}$	$2^{3.6\times10^9}$	$2^{8.6\times10^{10}}$	$2^{2.6\times10^{12}}$	$2^{3.1\times10^{13}}$	$2^{3.1\times10^{15}}$
$\sqrt{n}$	10^{12}	3.6×10^{15}	1.3×10^{19}	7.5×10^{21}	6.7×10^{24}	9.9×10^{26}	9.9×10^{30}
n	10^6	6×10^7	3.6×10^9	8.6×10^{10}	2.6×10^{12}	3.1×10^{13}	3.1×10^{15}
$n\lg n$	6.2×10^4	2.8×10^6	1.3×10^8	2.7×10^9	7.2×10^{10}	7.9×10^{11}	6.8×10^{13}
n^2	10^3	7.7×10^3	6×10^4	2.9×10^5	1.6×10^6	5.6×10^6	5.6×10^7
n^3	10^2	3.9×10^2	1.5×10^3	4.4×10^3	1.4×10^4	3.1×10^4	1.5×10^5
2^n	20	26	32	36	41	45	51
$n!$	9.4	11	13	14	15	16	17