(4) to check for every value of n when the value of n become at $n = 14$

$$100n^2 = 100 \times 15^2$$
$$= 100 \cdot \times 225$$
$$= 22500$$
$$2^n = 2^{15}$$
$$= 32768,$$ therefore, ~~this~~ algorith takes less time compare to the first one

(5)

	1 Second	1 minute	1 hour	1 day
$\lg n$	2^{10^6}	$2^{6 \cdot 10^7}$	$2^{36 \cdot 10^8}$	$2^{864 \cdot 10^8}$
$\sqrt{n}$	10^{12}	36×10^{14}	1296×10^{16}	7.4×10^{16}
n	10^6	6×10^7	36×10^8	864×10^8
$n \lg n$	62746	2.8×10^6	1.3×10^3	2.7×10^9
n^2	1000	7745	60000	1609968
n^3	100	391	1532	4420
2^n	19	25	31	36
$n!$	9	11	12	13