

# Time spent at 1,000,000 operations per second:

input size

algorithm speed

	10	20	30	40	50	60	...	100
$n$	$10^{-5}$ seconds	$2 \cdot 10^{-5}$ seconds	$3 \cdot 10^{-5}$ seconds	$4 \cdot 10^{-5}$ seconds	$5 \cdot 10^{-5}$ seconds	$6 \cdot 10^{-5}$ seconds		$10^{-4}$ seconds
$n^2$	$10^{-4}$ seconds	$4 \cdot 10^{-4}$ seconds	$9 \cdot 10^{-4}$ seconds	$1.6 \cdot 10^{-3}$ seconds	$2.5 \cdot 10^{-3}$ seconds	$3.6 \cdot 10^{-3}$ seconds		.01 second
$n^3$	$10^{-3}$ seconds	$8 \cdot 10^{-3}$ seconds	$2.7 \cdot 10^{-3}$ seconds	$6.4 \cdot 10^{-2}$ seconds	.125 second	.216 second		1 second
$n^{10}$	2.7 hours	118 days	18 years	333 years	3,103 years	19,213 years		31,775 centuries
$2^n$	$10^{-3}$ seconds	1 second	17 minutes	12 days	35.7 years	36,634 years		$4 \cdot 10^{14}$ centuries
$3^n$	.06 second	58 minutes	6.5 years	3863 centuries	$2 \cdot 10^8$ centuries	$1.3 \cdot 10^{13}$ centuries		$1.6 \cdot 10^{32}$ centuries
$n!$	3.6 seconds	773 centuries	$8 \cdot 10^{16}$ centuries	$2.6 \cdot 10^{32}$ centuries	$9.7 \cdot 10^{48}$ centuries	$2.6 \cdot 10^{66}$ centuries		$3 \cdot 10^{142}$ centuries
$2^{2^n}$	$>10^{292}$ centuries	$>10^{315637}$ centuries	ouch! →					