Number of elements	Quicksort time (milliseconds)	Heapsort time (milliseconds)
$1,000$	0 ms	0 ms
$1,000,000$	110 ms	268 ms
$10,000,000$	$1,205$ ms	$3,394$ ms
$100,000,000$	$13,635$ ms	$53,429$ ms
$1,000,000,000$	$\varnothing$	$\varnothing$

Ran on a MacBook Pro 2015, 16 GB RAM, 3.1 GHz Intel Core i7.

We were unable to complete the testing for array size 1 billion (java.lang.OutOfMemoryError: Java heap space). We increased the max heap space to 14 GB but were still unable to run the test at 1 billion.

Separate files: ChenGentle_quicksort.java and ChenGentle_heapsort.java. Code can be found at https://github.com/ZephyrEmbyr/Algorithms