Comparison

Algorithm	Worst-Case	Average-Case	Best-Case	In place?
Insertion Sort	$\Theta(n^2)$	$\Theta(n^2)$	$\Theta(n)$	Yes
Merge Sort	$\Theta(nlog(n))$	$\Theta(nlog(n))$	$\Theta(nlog(n))$	No
Quicksort	$\Theta(n^2)$	$\Theta(nlog(n))$	$\Theta(nlog(n))$	Yes
Heapsort	$O(nlog(n))$	$O(nlog(n))$	$O(nlog(n))$	Yes

Insertion sort is the most efficient sorting algorithm for short arrays since it has no recursive calls. However, for larger arrays quicksort and heapsort are generally more efficient.

Heapsort = $O(nlog(n))$ (worst case) which is better than Quicksort = $\Theta(n^2)$ (worst case). But the worst case scenario can often be avoided with quicksort by choosing the pivot wisely, for example with the median-of-three strategy. Quicksort is usually faster than heapsort when implemented wisely. But heapsort uses less storage which makes it good in for example embedded systems.