

## 2.91 Operation Counts for Three Sorting Algorithms

Table 1: Performance of Introsort, Mergesort, and Heapsort on Random Sequences (Sizes and Operations Counts in Multiples of 1,000)

Size	Algorithm	Com- parisons	Assign- ments	Iterator Ops	Integer Ops	Total Ops
1	Introsort	12.1	9.3	52.7	1.1	75.3
	Mergesort	9.7	14.3	59.1	4.1	87.3
	Heapsort	10.3	15.4	137.1	164.5	327.4
4	Introsort	57.3	43.2	247.5	4.5	352.5
	Mergesort	47.0	65.3	268.2	15.8	396.3
	Heapsort	49.3	69.7	644.4	773.5	1536.9
16	Introsort	261.5	195.3	1122.6	18.5	1597.9
	Mergesort	220.4	293.5	1201.1	62.6	1777.6
	Heapsort	229.2	310.9	2961.2	3557.6	7058.9
64	Introsort	1227.2	870.8	5132.0	73.8	7303.7
	Mergesort	1009.7	1302.2	5317.2	249.9	7879.0
	Heapsort	1044.7	1371.5	13380.1	16087.1	31883.4
256	Introsort	5643.0	3841.5	22988.3	293.7	32766.6
	Mergesort	4551.2	5721.1	23313.4	997.2	34583.0
	Heapsort	4691.2	5998.6	59668.5	71778.8	142137.1
1024	Introsort	24777.7	16827.7	100747.5	1176.1	143529.0
	Mergesort	20250.5	24927.3	101439.7	3992.4	150610.0
	Heapsort	20812.7	26042.3	263250.6	316801.4	626907.1