

**D = 32, M = 1000**

		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Serial	Euclid Quicksort	0.02133	0.023122	0.044452	0.074729	0.084901	0.15963	0.148413	0.167418	0.315831
		47.98%	52.02%	100.00%	46.81%	53.19%	100.00%	46.99%	53.01%	100.00%
	Euclid Mergesort	0.018935	0.020924	0.039859	0.078226	0.083202	0.161428	0.146966	0.166312	0.313278
		47.50%	52.50%	100.00%	48.46%	51.54%	100.00%	46.91%	53.09%	100.00%
	Euclid Bubblesort	0.019371	0.531754	0.551125	0.074229	2.143703	2.217932	0.147234	4.304201	4.451435
		3.51%	96.49%	100.00%	3.35%	96.65%	100.00%	3.31%	96.69%	100.00%
	Manhattan Quicksort	0.048478	0.020886	0.069364	0.191908	0.084287	0.276195	0.392653	0.170683	0.563336
		69.89%	30.11%	100.00%	69.48%	30.52%	100.00%	69.70%	30.30%	100.00%
	Manhattan Mergesort	0.04822	0.020996	0.069216	0.191624	0.084608	0.276232	0.382254	0.166384	0.548638
		69.67%	30.33%	100.00%	69.37%	30.63%	100.00%	69.67%	30.33%	100.00%
	Manhattan Bubblesort	0.048939	0.532164	0.581103	0.196771	2.199062	2.395833	0.383467	4.262315	4.645782
		8.42%	91.58%	100.00%	8.21%	91.79%	100.00%	8.25%	91.75%	100.00%
		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Parallel – Sections	Euclid Quicksort	0.005218	0.022326	0.027544	0.019432	0.089591	0.109023	0.039463	0.178609	0.218072
		18.94%	81.06%	100.00%	17.82%	82.18%	100.00%	18.10%	81.90%	100.00%
	Euclid Mergesort	0.005017	0.012565	0.017582	0.02015	0.049569	0.069719	0.039265	0.097854	0.137119
		28.53%	71.47%	100.00%	28.90%	71.10%	100.00%	28.64%	71.36%	100.00%
	Euclid Bubblesort	0.005279	0.302504	0.307783	0.01984	1.206996	1.226836	0.039092	2.407322	2.446414
		1.72%	98.28%	100.00%	1.62%	98.38%	100.00%	1.60%	98.40%	100.00%
	Manhattan Quicksort	0.01245	0.022688	0.035138	0.050333	0.08931	0.139643	0.097206	0.182271	0.279477
		35.43%	64.57%	100.00%	36.04%	63.96%	100.00%	34.78%	65.22%	100.00%
	Manhattan Mergesort	0.012906	0.012428	0.025334	0.049283	0.048857	0.09814	0.097688	0.097834	0.195522
		50.94%	49.06%	100.00%	50.22%	49.78%	100.00%	49.96%	50.04%	100.00%
	Manhattan Bubblesort	0.012222	0.296567	0.308789	0.049104	1.201139	1.250243	0.097324	2.401881	2.499205
		3.96%	96.04%	100.00%	3.93%	96.07%	100.00%	3.89%	96.11%	100.00%

**D = 32, M = 10000**

		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Serial	Euclid Quicksort	0.185437	0.278401	0.463838	0.742582	1.142975	1.885557	1.49807	2.263777	3.761847
		39.98%	60.02%	100.00%	39.38%	60.62%	100.00%	39.82%	60.18%	100.00%
	Euclid Mergesort	0.185513	0.270867	0.45638	0.745718	1.086814	1.832532	1.504401	2.174905	3.679306
		40.65%	59.35%	100.00%	40.69%	59.31%	100.00%	40.89%	59.11%	100.00%
	Euclid Bubblesort	0.184268	69.25875	69.443018	0.737184	276.673706	277.41089	1.515635	555.761849	557.277484
		0.27%	99.73%	100.00%	0.27%	99.73%	100.00%	0.27%	99.73%	100.00%
	Manhattan Quicksort	0.471655	0.278674	0.750329	1.932381	1.127525	3.059906	3.823178	2.227547	6.050725
		62.86%	37.14%	100.00%	63.15%	36.85%	100.00%	63.19%	36.81%	100.00%
	Manhattan Mergesort	0.47597	0.274112	0.750082	1.904061	1.093334	2.997395	3.903143	2.232834	6.135977
		63.46%	36.54%	100.00%	63.52%	36.48%	100.00%	63.61%	36.39%	100.00%
	Manhattan Bubblesort	0.471319	69.964528	70.435847	1.887251	279.456457	281.343708	3.847039	555.535158	559.382197
		0.67%	99.33%	100.00%	0.67%	99.33%	100.00%	0.69%	99.31%	100.00%
		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total

Sheet1											
Parallel – Sections	Euclid Quicksort	0.047862	0.297711	0.345573	0.190373	1.194485	1.384858	0.379271	2.390482	2.769753	9.949771
		13.85%	86.15%	100.00%	13.75%	86.25%	100.00%	13.69%	86.31%	100.00%	Total
	Euclid Mergesort	0.072815	0.155163	0.227978	0.190162	0.625722	0.815884	0.388684	1.25202	1.640704	6.275755
		31.94%	68.06%	100.00%	23.31%	76.69%	100.00%	23.69%	76.31%	100.00%	Total
	Euclid Bubblesort	0.047736	16.933148	16.980884	0.19027	66.511185	66.701455	0.383545	142.115242	142.498787	445.880398
		0.28%	99.72%	100.00%	0.29%	99.71%	100.00%	0.27%	99.73%	100.00%	
	Manhattan Quicksort	0.120505	0.297456	0.417961	0.480964	1.194215	1.675179	0.974073	2.382374	3.356447	
		28.83%	71.17%	100.00%	28.71%	71.29%	100.00%	29.02%	70.98%	100.00%	
	Manhattan Mergesort	0.12055	0.154432	0.274982	0.481281	0.626853	1.108134	0.966649	1.241424	2.208073	
		43.84%	56.16%	100.00%	43.43%	56.57%	100.00%	43.78%	56.22%	100.00%	
	Manhattan Bubblesort	0.120661	16.675757	16.796418	0.481504	68.690477	69.171981	1.251648	132.479225	133.730873	
		0.72%	99.28%	100.00%	0.70%	99.30%	100.00%	0.94%	99.06%	100.00%	
N = 800, M = 5000											
Serial	Euclid Quicksort	Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
		0.674948	0.515213	1.190161	1.315786	0.515559	1.831345	2.841606	0.535521	3.377127	0.506111
	Manhattan Quicksort	56.71%	43.29%	100.00%	71.85%	28.15%	100.00%	84.14%	15.86%	100.00%	91.02%
		1.976354	0.520283	2.496637	4.081035	0.512601	4.593636	8.34295	0.510896	8.853846	16.495382
Parallel – Sections	Euclid Quicksort	79.16%	20.84%	100.00%	88.84%	11.16%	100.00%	94.23%	5.77%	100.00%	97.02%
		Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
	Manhattan Quicksort	0.177186	0.553123	0.730309	0.351709	0.55312	0.904829	0.686863	0.550247	1.23711	1.34542
		24.26%	75.74%	100.00%	38.87%	61.13%	100.00%	55.52%	44.48%	100.00%	71.32%
Parallel – Task	Euclid Quicksort	0.501356	0.551249	1.052605	1.285376	0.600948	1.886324	2.097209	0.54858	2.645789	4.200083
		47.63%	52.37%	100.00%	68.14%	31.86%	100.00%	79.27%	20.73%	100.00%	88.54%
	Euclid Mergesort	Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
		0.340829	0.127135	0.467964	1.310158	0.509183	1.819341	2.655198	1.021084	3.676282	5.963587
Serial	Euclid Quicksort	72.83%	27.17%	100.00%	72.01%	27.99%	100.00%	72.23%	27.77%	100.00%	91.02%
		0.33894	0.128812	0.467752	1.335546	0.513219	1.848765	2.716285	1.008583	3.724868	6.041385
	Euclid Mergesort	72.46%	27.54%	100.00%	72.24%	27.76%	100.00%	72.92%	27.08%	100.00%	91.02%
		Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
Parallel – Sections	Euclid Quicksort	0.097136	0.136048	0.233184	0.344492	0.545125	0.889617	0.685049	1.092301	1.77735	2.900151
		41.66%	58.34%	100.00%	38.72%	61.28%	100.00%	38.54%	61.46%	100.00%	71.32%
	Euclid Mergesort	0.089513	0.072728	0.162241	0.34213	0.289784	0.631914	0.71208	0.600064	1.312144	2.106299
		55.17%	44.83%	100.00%	54.14%	45.86%	100.00%	54.27%	45.73%	100.00%	71.32%
Parallel – Task	Euclid Quicksort	Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
		0.085774	0.054641	0.140415	0.341588	0.218592	0.56018	0.694535	0.440426	1.134961	1.835556
	Euclid Mergesort	61.09%	38.91%	100.00%	60.98%	39.02%	100.00%	61.19%	38.81%	100.00%	71.32%
		0.089108	0.072744	0.161852	0.343702	0.292879	0.636581	0.697322	0.583481	1.280803	2.079236
Parallel – Task	Euclid Quicksort	55.06%	44.94%	100.00%	53.99%	46.01%	100.00%	54.44%	45.56%	100.00%	71.32%
		Dist	D = 64 Sort	Total	Dist	D = 128 Sort	Total	Dist	D = 256 Sort	Total	D = 5 Dist
	Euclid Mergesort	0.085774	0.054641	0.140415	0.341588	0.218592	0.56018	0.694535	0.440426	1.134961	1.835556
		61.09%	38.91%	100.00%	60.98%	39.02%	100.00%	61.19%	38.81%	100.00%	71.32%

**Average Speedup**

0.566134148185061 1.766365804

0.385770499577255 2.592214804

0.541612629613136 1.846338038

**Average Speedup**

0.622942973047799 1.605283378

0.395904924098858 2.52585896

0.245624459869607 4.071255772

12

<b>Total</b>	<b>Total</b>	
5.638692	12.037325	
1		
17.002101	32.94622	2.737005107
1		

12

<b>Total</b>	<b>Total</b>	<b>Speedup</b>	
1.886425	4.758673	0.395326453	2.529554983
1			
4.743869	10.328587	0.313498392	3.189809022
1			

0.486309833 2.056302241

0.348645054 2.868246626

0.30779395 3.248926756

0.344165452 2.905579261

D = 128, M = 5000

		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Serial	Euclid Quicksort	0.340829	0.127135	0.467964	1.310158	0.509183	1.819341	2.655198	1.021084	3.676282
		72.83%	27.17%		72.01%	27.99%		72.23%	27.77%	
	Euclid Mergesort	0.33894	0.128812	0.467752	1.335546	0.513219	1.848765	2.716285	1.008583	3.724868
		72.46%	27.54%		72.24%	27.76%		72.92%	27.08%	
		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Parallel – Sections	Euclid Quicksort	0.097136	0.136048	0.233184	0.344492	0.545125	0.889617	0.685049	1.092301	1.77735
		41.66%	58.34%		38.72%	61.28%		38.54%	61.46%	
	Euclid Mergesort	0.089513	0.072728	0.162241	0.34213	0.289784	0.631914	0.71208	0.600064	1.312144
		55.17%	44.83%		54.14%	45.86%		54.27%	45.73%	
		N = 200			N = 800			N = 1600		
		Dist	Sort	Total	Dist	Sort	Total	Dist	Sort	Total
Parallel – Task	Euclid Quicksort	0.085774	0.054641	0.140415	0.341588	0.218592	0.56018	0.694535	0.440426	1.134961
		61.09%	38.91%		60.98%	39.02%		61.19%	38.81%	
	Euclid Mergesort	0.089108	0.072744	0.161852	0.343702	0.292879	0.636581	0.697322	0.583481	1.280803
		55.06%	44.94%		53.99%	46.01%		54.44%	45.56%	