GREEDY

PROBLEM_SIZE	
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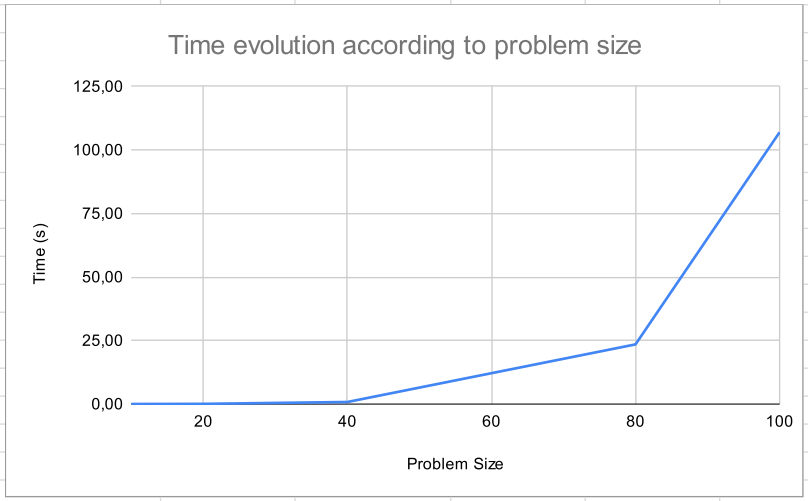
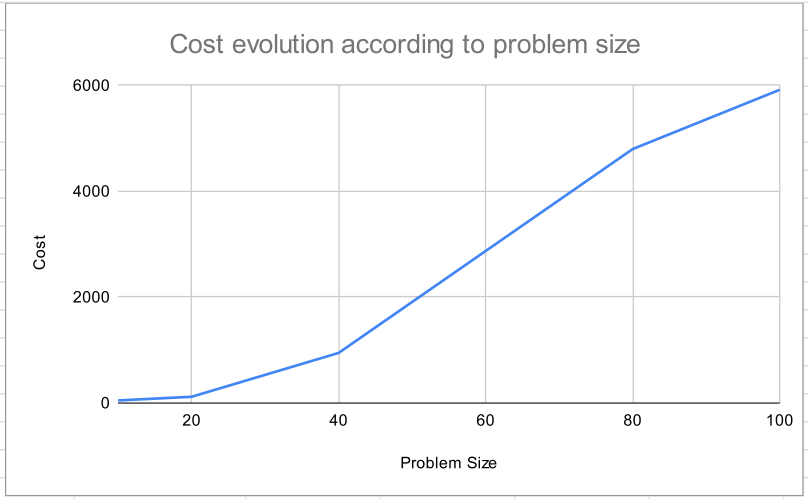
20	0,07
40	0,80
80	23,47
100	106,96
200	

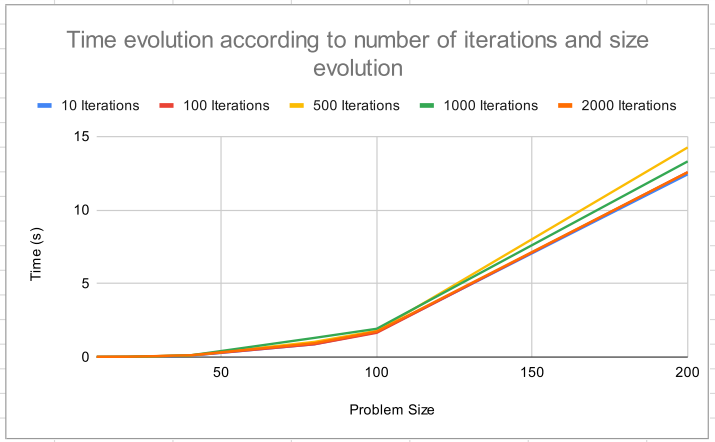




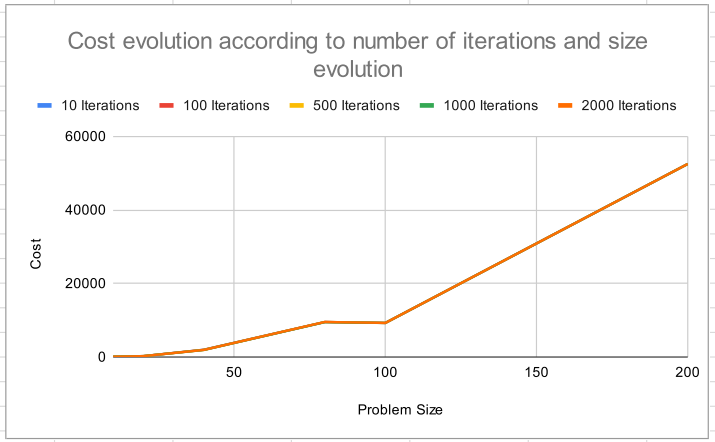
PROBLEM_SIZE	
10	48,18
20	117,88
40	946,27
80	4798,28
100	5918,08

HILL_CLIMBING

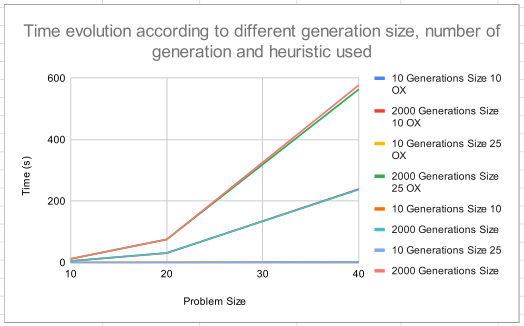
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		0,007	0,01	0,007	0,005	0,006
20		0,0164	0,0195	0,014	0,009	0,016
40		0,088	0,099	0,11	0,11	0,119
80		0,87	0,866	1,03	1,3	0,94
100		1,69	1,644	1,78	1,92	1,73
200		12,42	12,57	14,25	13,3	12,56

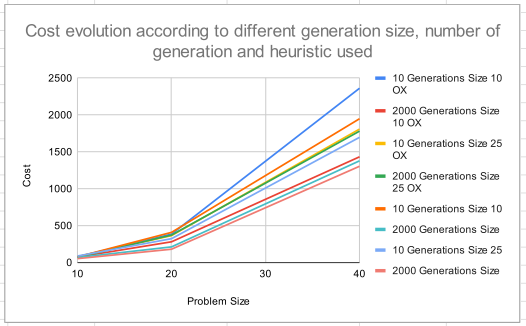


	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		67,76	69,38	73,42	70,06	68,22
20		235,89	235,13	236,19	236,07	230,38
40		1.975,45	1.975,36	1.929,15	1907,36	1916,55
80		9513,92	9513,92	9515,34	9467,95	9519,43
100		9254,84	9250,79	9250,84	9.250,04	9255,5
200		52492,67	52480,35	52485,03	52480,45	52483,8



				GENETIC OX						GENETIC PMX				
GENERATION_SIZE	10						GENERATION_SIZE	10						
	GENERATIONS	10	100	500	1000	2000		GENERATIONS	10	100	500	1000	2000	
PROBLEM_SIZE							PROBLEM_SIZE							
10		0,0621	0,299	1,37	2,622	5,237	10		0,066	0,306	1,373	2,663	5,573	
20		0,199	1,644	7,875	15,95	31,139	20		0,205	1,691	7,665	15,552	31,741	
40		1,213	10,817	56,729	114,69	239,42	40		1,153	10,952	57,677	119,69	237,83	
				GENETIC OX						GENETIC PMX				
GENERATION_SIZE	25						GENERATION_SIZE	25						
	GENERATIONS	10	100	500	1000	2000		GENERATIONS	10	100	500	1000	2000	
PROBLEM_SIZE							PROBLEM_SIZE							
10		0,11	0,639	3,141	7,246	12,413	10		0,101	0,66	3,067	7,097	12,485	
20		0,418	3,751	18,911	37,504	75,763	20		0,421	3,829	18,043	37,415	75,567	
40		2,696	25,544	137,68	282,365	564,054	40		2,672	26,066	137,441	286,07	577,65	
				GENETIC OX						GENETIC PMX				
GENERATION_SIZE	10						GENERATION_SIZE	10						
	GENERATIONS	10	100	500	1000	2000		GENERATIONS	10	100	500	1000	2000	
PROBLEM_SIZE							PROBLEM_SIZE							
10		77,1	59,58	64,73	98,04	74,55	10		77,29	68,23	65,75	65,98	68,52	
20		385,59	368,72	304,7	332,24	281,55	20		409,3	312,72	218,98	231,95	212,46	
40		2362,77	1627,07	1852,5	2110,65	1433,5	40		1949,65	1528,18	1105,21	1303,7	1379,13	
				GENETIC OX						GENETIC PMX				
GENERATION_SIZE	25						GENERATION_SIZE	25						
	GENERATIONS	10	100	500	1000	2000		GENERATIONS	10	100	500	1000	2000	
PROBLEM_SIZE							PROBLEM_SIZE							
10		80	62,983	62,52	55,42	71,03	10		88,88	94,84	72,8	63,44	53,39	
20		365,23	338,33	319,1	340,546	372,73	20		323,72	172,34	225,98	311,88	181	
40		1809,13	1941,33	2016,4	1630,19	1781,68	40		1697,57	1160,51	1148,02	895,55	1305,37	





				SIMULATED_ANNEALING						SIMULATED_ANNEALING						SIMULATED_ANNEALING					
INITIAL_TEMP=100								INITIAL_TEMP=100							INITIAL_TEMP=100						
COOLING = 0.01								COOLING = 0.1							COOLING = 1						
	ITERATIONS	10	100	500	1000	2000			ITERATIONS	10	100	500	1000	2000		ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE								PROBLEM_SIZE							PROBLEM_SIZE						
10		0.00123 s / 58.928 custo	0.01166 s / 55.616 custo	0.05519 s / 48.889 custo	0.10765 s / 49.687 custo	0.21602 s / 65.291 custo		10		0.00136 s / 64.564 custo	0.01247 s / 61.525 custo	0.05694 s / 48.420 custo	0.11035 s / 66.520 custo	0.21748 s / 55.066 custo	10		0.00153 s / 104.999 custo	0.01574 s / 72.199 custo	0.07811 s / 95.159 custo	0.15574 s / 75.114 custo	0.31325 s / 68.383 custo
20		0.00699 s / 315.124 cost	0.06785 s / 155.097 cost	0.30021 s / 146.039 cost	0.59354 s / 140.965 cost	1.17454 s / 156.175 cost		20		0.00671 s / 417.426 cost	0.06528 s / 165.794 cost	0.31423 s / 206.093 cost	0.6011 s / 137.341 cost	1.20556 s / 139.39 cost	20		0.00821 s / 171.648 cost	0.08164 s / 259.115 cost	0.44835 s / 276.139 cost	0.83426 s / 288.452 cost	1.6673 s / 280.688 cost
40		0.04931 s / 1400.578 cost	0.47465 s / 667.835 cost	2.22166 s / 437.47 cost	4.33294 s / 426.523 cost	8.5363 s / 443.909 cost		40		0.05558 s / 1427.521 cost	0.47848 s / 581.404 cost	2.24328 s / 442.869 cost	4.35112 s / 429.791 cost	8.56435 s / 340.693 cost	40		0.05957 s / 1346.107 cost	0.57658 s / 1077.499 cost	2.90397 s / 1135.793 cost	5.77817 s / 807.498 cost	11.4359 s / 907.466 cost
80		0.36915 s / 6931.775 cost	3.57087 s / 4734.086 cost	16.02488 s / 4188.436 cost	31.38954 s / 3321.441 cost	62.06127 s / 3513.998 cost		80		0.35215 s / 6947.927 cost	3.53603 s / 4665.567 cost	16.61484 s / 2192.712 cost	32.00149 s / 2705.408 cost	62.77267 s / 2576.218 cost	80		0.39668 s / 6167.889 cost	3.86584 s / 5556.905 cost	19.29338 s / 2967.508 cost	39.09477 s / 4150.144 cost	77.53326 s / 3325.121 cost
100		0.7109 s / 11491.744 cost	7.31903 s / 5990.652 cost	31.45731 s / 5615.029 cost				100		0.78106 s / 11413.695 cost	7.07693 s / 7383.513 cost	32.63357 s / 3466.142 cost			100		0.86366 s / 10867.162 cost	8.10525 s / 7417.706 cost	40.10991 s / 4726.578 cost		
200		6.40866 s / 51748.73 cost	58.06031 s / 39418.998 cost	254.33998 s / 33473.688 cost				200		5.41346 s / 54188.468 cost	56.25959 s / 39873.881 cost	257.79723 s / 26322.129 cost			200		6.11764 s / 53054.871 cost	61.56054 s / 41069.535 cost	289.40934 s / 24131.225 cost		
				SIMULATED_ANNEALING						SIMULATED_ANNEALING						SIMULATED_ANNEALING					
INITIAL_TEMP = 10								INITIAL_TEMP = 10							INITIAL_TEMP = 10						
COOLING = 0.01								COOLING = 0.1							COOLING = 1						
	ITERATIONS	10	100	500	1000	2000			ITERATIONS	10	100	500	1000	2000		ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE								PROBLEM_SIZE							PROBLEM_SIZE						
10		0.00129 s / 54.710 custo	0.01235 s / 65.064 custo	0.05568 s / 64.519 custo	0.10706 s / 51.425 custo	0.21374 s / 63.611 custo		10		0.00129 s / 77.252 custo	0.01252 s / 63.153 custo	0.05843 s / 67.473 custo	0.10980 s / 58.582 custo	0.21715 s / 50.370	10		0.00144 s / 69.492 custo	0.01431 s / 89.835 custo	0.07028 s / 75.598 custo	0.13950 / 64.687 custo	0.28277 s / 65.343 custo
20		0.00676 s / 284.815 cost	0.06583 s / 111.397 cost	0.30223 s / 126.525 cost	0.59529 s / 147.161 cost	1.17524 s / 116.201 cost		20		0.007 s / 331.624 cost	0.06333 s / 148.352 cost	0.30538 s / 139.271 cost	0.60322 s / 131.008 cost	1.18024 s / 127.096 cost	20		0.00787 s / 174.733 cost	0.07272 s / 165.774 cost	0.36188 s / 183.887 cost	0.70485 s / 167.383 cost	1.43029 s / 183.934 cost
40		0.04512 s / 1481.264 cost	0.47438 s / 767.571 cost	2.19516 s / 502.682 cost	4.30612 s / 536.888 cost	8.50901 s / 463.031 cost		40		0.04697 s / 1478.319 cost	0.50434 s / 557.648 cost	2.23661 s / 338.007 cost	4.35321 s / 415.904 cost	8.60754 s / 366.175 cost	40		0.04908 s / 1473.204 cost	0.50832 s / 450.922 cost	2.44321 s / 457.429 cost	4.88577 s / 354.97 cost	9.6306 s / 425.884 cost
80		0.35364 s / 7197.82 cost	3.51938 s / 4746.91 cost	16.17462 s / 3316.018 cost	31.33748 s / 3375.281 cost	62.56181 s / 3590.623 cost		80		0.41261 s / 6942.559 cost	3.55455 s / 4082.326 cost	17.02297 s / 2486.978 cost	32.14112 s / 3095.117 cost	63.99657 s / 2283.708 cost	80		0.38158 s / 7192.821 cost	3.77053 s / 4106.248 cost	17.84373 s / 2067.995 cost	34.79486 s / 1676.913 cost	71.03144 s / 1277.475 cost
100		0.86779 s / 10642.728 cost	7.1317 s / 6946.029 cost	31.37038 s / 5743.731 cost				100		0.77094 s / 10723.245 cost	6.9537 s / 6250.317 cost	32.12522 s / 4248.974 cost			100		0.74071 s / 12125.838 cost	7.04567 s / 5272.813 cost	33.56027 s / 2911.481 cost		
200		5.66581 s / 54099.781 cost	57.32744 s / 39713.932 cost	249.82333 s / 37740.26 cost				200		6.06731 s / 53307.726 cost	56.54472 s / 39802.486 cost	258.89211 s / 29874.154 cost			200		5.18798 s / 55242.155 cost	57.30771 s / 39983.818 cost	275.57372 s / 22273.244 cost		
				SIMULATED_ANNEALING						SIMULATED_ANNEALING						SIMULATED_ANNEALING					
INITIAL_TEMP = 50								INITIAL_TEMP = 50							INITIAL_TEMP = 50						
COOLING = 0.01								COOLING = 0.1							COOLING = 1						
	ITERATIONS	10	100	500	1000	2000			ITERATIONS	10	100	500	1000	2000		ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE								PROBLEM_SIZE							PROBLEM_SIZE						
10		0.00133 s / 61.613 custo	0.01237 s / 47.724 custo	0.05774 s / 58.152 custo	0.10835s / 68.819 custo	0.21351 s / 55.307 custo		10		0.00128 s / 64.083 custo	0.01184 s / 60.417 custo	0.05599 s / 71.784 custo	0.10934 s / 56.427 custo	0.21727 s / 61.483 custo	10		0.00153 s / 60.660 custo	0.01567 s / 73.413 custo	0.07717 s / 88.221 custo	0.15626 s / 94.537 custo	0.30805 s / 74.788 custo
20		0.00671 s / 349.295 cost	0.0651 s / 119.549 cost	0.30306 s / 152.002 cost	0.5939 s / 169.533 cost	1.17114 s / 150.43 cost		20		0.00711 s / 279.279 cost	0.06694 s / 139.084 cost	0.31888 s / 115.788 cost	0.60361 s / 147.379 cost	1.18443 s / 162.872 cost	20		0.00759 s / 280.972 cost	0.08105 s / 213.914 cost	0.40415 s / 231.948 cost	0.80131 s / 306.703 cost	1.61815 s / 238.169 cost
40		0.05326 s / 1319.38 cost	0.48569 s / 640.674 cost	2.2061 s / 501.144 cost	4.3182 s / 486.051 cost	8.56146 s / 469.766 cost		40		0.04928 s / 1267.826 cost	0.48025 s / 460.29 cost	2.25929 s / 321.566 cost	4.38949 s / 350.493 cost	8.63173 s / 381.174 cost	40		0.06403 s / 1286.158 cost	0.55171 s / 661.934 cost	2.68818 s / 806.269 cost	5.4414 s / 750.644 cost	10.92822 s / 760.874 cost
80		0.40333 s / 6491.209 cost	3.58499 s / 4893.031 cost	16.54334 s / 2956.339 cost	32.05152 s / 3433.696 cost	63.42144 s / 4049.72 cost		80		0.34073 s / 7149.549 cost	3.6583 s / 3772.013 cost	16.44668 s / 2966.104 cost	31.96866 s / 2945.022 cost	64.01934 s / 2380.646 cost	80		0.40287 s / 7227.422 cost	3.86687 s / 5567.558 cost	18.91956 s / 3117.019 cost	37.77236 s / 1722.855 cost	75.32466 s / 2626.706 cost
100		0.71083 s / 11146.286 cost	7.32329 s / 7388.538 cost	31.6517 s / 4150.57 cost				100		0.74112 s / 12125.429 cost	7.01192 s / 5377.695 cost	32.34177 s / 3485.92 cost			100		0.82995 s / 10904.106 cost	7.46085 s / 6649.068 cost	36.51772 s / 3463.721 cost		
200		6.35224 s / 52558.846 cost	55.94851 s / 43770.823 cost	261.48609 s / 33282.943 cost				200		6.32777 s / 51382.726 cost	58.86883 s / 39500.684 cost	274.74073 s / 27235.687 cost			200		5.42209 s / 55340.836 cost	59.27649 s / 41439.796 cost	286.17459 s / 24110.303 cost		
				SIMULATED_ANNEALING						SIMULATED_ANNEALING						SIMULATED_ANNEALING					
INITIAL_TEMP = 200								INITIAL_TEMP = 200							INITIAL_TEMP = 200						
COOLING = 0.01								COOLING = 0.1							COOLING = 1						
	ITERATIONS	10	100	500	1000	2000			ITERATIONS	10	100	500	1000	2000		ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE								PROBLEM_SIZE							PROBLEM_SIZE						
10		0.00140 s / 79.731 custo	0.01178 s / 69.570 custo	0.05538 s / 60.142 custo	0.10779 s / 68.016 custo	0.21299 s / 71.851 custo		10		0.00134 s / 68.760 custo	0.01165 s / 73.649 custo	0.05606 s / 62.801 custo	0.11063 s / 59.499 custo	0.21505 s / 55.455 custo	10		0.00154 s / 60.358 custo	0.01580 s / 71.195 custo	0.07859 s / 87.076 custo	0.15739 s / 89.953 custo	0.31467 s / 91.029 custo
20		0.00701 s / 327.35 cost	0.06422 s / 179.113 cost	0.30157 s / 166.566 cost	0.59098 s / 142.789 cost	1.1713 s / 165.798 cost		20		0.00756 s / 248.373 cost	0.0652 s / 159.803 cost	0.31128 s / 150.872 cost	0.60236 s / 146.596 cost	1.1838 s / 126.464 cost	20		0.00874 s / 318.633 cost	0.08716 s / 353.173 cost	0.42714 s / 319.653 cost	0.848 s / 267.184 cost	1.70166 s / 289.939 cost
40		0.05539 s / 1144.572 cost	0.48104 s / 606.021 cost	2.22007 s / 556.229 cost	4.33456 s / 496.084 cost	8.66209 s / 421.716 cost		40		0.05345 s / 1456.321 cost	0.48046 s / 596.422 cost	2.29313 s / 365.793 cost	4.41615 s / 292.643 cost	8.69372 s / 321.404 cost	40		0.05993 s / 1370.785 cost	0.60232 s / 1486.434 cost	3.05026 s / 1024.407 cost	6.07312 s / 1497.646 cost	11.93316 s / 1239.134 cost
80		0.3953 s / 7070.658 cost	3.66066 s / 3648.624 cost	16.46498 s / 2914.64 cost	32.25854 s / 3597.156 cost	63.72794 s / 3622.591 cost		80		0.44019 s / 6991.03 cost	3.66269 s / 4559.526 cost	16.90386 s / 2689.592 cost	32.43826 s / 2446.07 cost	64.01521 s / 2650.668 cost	80		0.3884 s / 7293.253 cost	4.29546 s / 6096.642 cost	21.23195 s / 5222.839 cost	41.2123 s / 5370.022 cost	83.71598 s / 5301.424 cost
100		0.74055 s / 11481.006 cost	7.06128 s / 6337.776 cost	31.34409 s / 5586.159 cost				100		0.77122 s / 11511.019 cost	7.06334 s / 7059.352 cost	32.06844 s / 3861.552 cost			100		0.7416 s / 11717.934 cost	8.21424 s / 8627.279 cost	39.86951 s / 5762.686 cost		
200		6.02133 s / 58945.61 cost	59.97432 s / 41002.042 cost	251.70857 s / 39623.461 cost				200		5.71006 s / 59412.884 cost	60.09067 s / 42125.813 cost	267.20855 s / 29542.196 cost			200		6.4358 s / 59401.784 cost	62.99486 s / 46482.708 cost	303.19175 s / 21922.914 cost		
				SIMULATED_ANNEALING						SIMULATED_ANNEALING						SIMULATED_ANNEALING					
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COOLING = 0.01								COOLING = 0.1							COOLING = 1						
	ITERATIONS	10	100	500	1000	2000			ITERATIONS	10	100	500	1000	2000		ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE								PROBLEM_SIZE							PROBLEM_SIZE						
10		0.00121 s / 157.519 custo	0.01274 s / 62.567 custo	0.05531 s / 59.039 custo	0.10895 s / 69.609 custo	0.21368 s / 68.940 custo		10		0.00131 s / 86.485 custo	0.01224 s / 68.961 custo	0.05763 s / 74.971 custo	0.11078 s / 47.041 custo	0.21393 s / 61.212 custo	10		0.00159 s / 85.518 custo	0.01583 s / 66.364 custo	0.07908 s / 82.623 custo	0.15820 s / 68.675 custo	0.31654 s / 81.237 custo
20		0.00767 s / 330.112 cost	0.06673 s / 174.814 cost	0.29955 s / 162.417 cost	0.58753 s / 158.306 cost	1.17299 s / 146.858 cost		20		0.00734 s / 295.875 cost	0.06805 s / 169.51 cost	0.30858 s / 132.343 cost	0.60626 s / 150.034 cost	1.17558 s / 160.45 cost	20		0.00873 s / 376.991 cost	0.08737 s / 301.861 cost	0.43577 s / 267.545 cost	0.86655 s / 300.003 cost	1.74078 s / 333.838 cost
40		0.05326 s / 1227.883 cost	0.49031 s / 682.611 cost	2.22351 s / 509.099 cost	4.38136 s / 556.926 cost	8.68954 s / 463.375 cost		40		0.05353 s / 1296.317 cost	0.49469 s / 462.117 cost	2.27999 s / 456.797 cost	4.45317 s / 338.693 cost	8.66852 s / 299.772 cost	40		0.06248 s / 1345.193 cost	0.8329 s / 1246.713 cost	3.14199 s / 1858.516 cost	6.31756 s / 1615.998 cost	12.73133 s / 1324.073 cost
80		0.404 s / 6896.639 cost	3.56698 s / 4643.713 cost	16.12282 s / 3899.438 cost	31.89191 s / 3604.597 cost	62.67014 s / 3431.29 cost		80		0.38675 s / 6208.612 cost	3.67359 s / 3869.516 cost	16.79636 s / 2457.61 cost	32.25618 s / 2398.5 cost	63.23669 s / 2377.826 cost	80		0.44884 s / 6628.71 cost	4.50018 s / 7021.848 cost	22.40505 s / 6631.201 cost	45.30256 s / 8889.477 cost	90.11072 s / 5123.431 cost
100		0.71059 s / 11800.601 cost	7.29055 s / 6027.235 cost	31.22502 s / 5793.19 cost				100		0.82936 s / 11152.936 cost	7.25932 s / 6172.406 cost	32.43248 s / 3652.8 cost			100		0.85907 s / 11696.673 cost	8.53074 s / 10751.227 cost	43.42734 s / 9540.815 cost		
200		6.09504 s / 56722.963 cost	61.07558 s / 41779.504 cost	254.68872 s / 38275.816 cost				200		6.46159 s / 55755.024 cost	57.58365 s / 46052.493 cost	262.99704 s / 25554.256 cost			200		7.59745 s / 56434.506 cost	67.95891 s / 55282.694 cost	333.92134 s / 44230.783 cost		

TABU

TABU_SIZE = 10						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		0,012	0,082	0,388	0,768	1,506
20		0,049	0,441	2,225	4,465	9,003
40		0,313	2,932	15,12	32,162	65,855
80		2,41	24,45	132,108	317,27	649,08

TABU

TABU_SIZE = 20						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		0,011	0,08	0,383	0,759	1,511
20		0,05	0,464	2,288	4,499	11,085
40		0,329	3,211	16,032	32,52	65,052
80		3,105	29,652	153,11	263,511	563,903

TABU

TABU_SIZE = 50						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		0,022	0,089	0,405	0,766	1,518
20		0,051	0,517	2,586	5,016	9,337
40		0,327	3,143	15,938	31,773	63,969
80		3,428	32,702	162,987	328,673	777,305

TABU

TABU_SIZE = 100						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		0,021	0,088	0,395	0,77	1,525
20		0,048	0,481	2,429	5,053	9,925
40		0,403	3,389	16,272	31,16	64,34
80		3,189	32,18	162,225	342,963	634,6

TABU

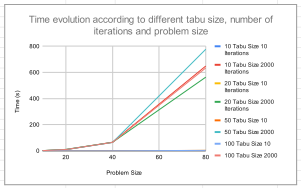
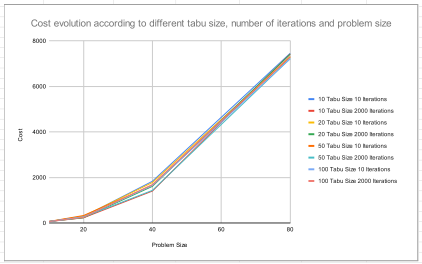
TABU_SIZE = 10						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		66,48	65,912	65,004	61,32	64,033
20		280,43	246,612	238,30	245,244	231,346
40		1834,441	1353,245	1.431,81	1650,456	1405,597
80		7455,36	7249,562	7202,824	7314,879	7428,761

TABU

TABU_SIZE = 20						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		65,687	70,631	80,098	75,634	69,364
20		300,261	258,799	238,453	256,783	234,003
40		1780,597	1549,44	1.386,43	1.404,46	1612,528
80		7312,932	7335,154	7341,935	7411,186	7413,447

TABU

TABU_SIZE = 50						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		69,931	98,701	79,002	72,229	70,2
20		330,258	218,898	249,772	225,341	265,003
40		1654,533	1515,639	1756,054	1677,448	1433,754
80		7288,105	7400,594	7346,22	7555,393	7225,777

TABU

TABU_SIZE = 100						
	ITERATIONS	10	100	500	1000	2000
PROBLEM_SIZE						
10		65,23	67,2	63,075	73,761	68,535
20		266,198	209,383	231,798	259,076	250,097
40		1648,894	1707,281	1806,646	1549,538	1692,069
80		7212,429	7459,413	7456,171	7512,497	7311,893