Results

Test	Input sizes		Exact agorithm						Heuristic algorithm								
			MIP			CP			BaB-based			BFS			Greedy		
	n_items	n_trucks	n_trucks_used	cost	running_time	n_trucks_used	cost	running_time	n_trucks_used	cost	running_time	n_trucks_used	cost	running_time	n_trucks_used	cost	running_time
Phase_1/input_ 1.txt	11	11	3	379	300.010658	3	379	1.966683865	3	440	0.00193	3	440	0.000599	3	480	0.000595
Phase_1/input_ 2.txt	12	12	3	524	300.0128131	3	525	2.271491766	3	586	0.00382	3	586	0.00054	3	587	0.000228
Phase_1/input_17.txt	27	27	20	6403	300.097332	8	2198	300.8694186	10	2851	107.306	11	3004	0.008972	12	3392	0.000434
Phase_1/input_18.txt	28	28	N/A	N/A	N/A	6	1225	300.3192265	7	1400	23.8025	7	1400	0.006065	6	1826	0.000397
Phase_1/input_19.txt	29	29	N/A	N/A	N/A	6	1500	300.3155289	6	1620	33.118	7	1585	0.006674	7	1689	0.000439
Phase_1/input_20.txt	30	30	N/A	N/A	N/A	10	2138	300.4902072	N/A	N/A	N/A	11	2444	0.010007	12	2666	0.000517
Phase_1/input_21.txt	31	31	28	9405	300.1865339	6	1768	300.3711581	6	1768	23.2625	7	1881	0.008157	7	2032	0.000456
Phase_1/input_22.txt	32	32	32	9577	298.6576328	7	1495	300.429951	8	1557	35.8825	8	1645	0.008687	8	1738	0.000498
Phase_1/input_23.txt	33	33	32	9140	299.460072	8	1349	300.7887225	8	1394	113.718	8	1394	0.009524	9	1673	0.000506
Phase_1/input_24.txt	34	34	N/A	N/A	N/A	7	1740	300.4620039	N/A	N/A	N/A	8	1858	0.009818	8	1887	0.000788
Phase_1/input_25.txt	35	35	N/A	N/A	N/A	12	2496	300.4891446	N/A	N/A	N/A	12	2774	0.014589	14	3208	0.000687
Phase_1/input_26.txt	36	36	N/A	N/A	N/A	9	1523	301.1055863	N/A	N/A	N/A	9	1602	0.011048	9	1602	0.000548
Phase_1/input_27.txt	37	37	N/A	N/A	N/A	9	1727	300.5594301	N/A	N/A	N/A	10	1842	0.013214	11	2189	0.000605
Phase_2/input_ 9.txt	100	188	N/A	N/A	N/A	44	5834	313.9515698	N/A	N/A	N/A	25	3819	0.838167	26	3896	0.002996
Phase_2/input_10.txt	100	284	N/A	N/A	N/A	25	4858	320.5264404	N/A	N/A	N/A	23	4157	1.24108	25	4463	0.003432
Phase_2/input_11.txt	110	203	N/A	N/A	N/A	42	5758	318.3541405	N/A	N/A	N/A	25	3768	0.922542	25	3798	0.003366
Phase_2/input_12.txt	120	237	N/A	N/A	N/A	53	6976	324.6034114	N/A	N/A	N/A	31	4425	1.72192	32	4609	0.004157
Phase_2/input_13.txt	130	130	N/A	N/A	N/A	39	8161	316.8200858	N/A	N/A	N/A	38	6616	1.23847	40	7030	0.004339
Phase_2/input_14.txt	140	272	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	5001	2.2916	32	5240	0.005156
Phase_2/input_15.txt	150	217	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	36	7057	2.85681	36	7271	0.005512
Phase_2/input_16.txt	160	168	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	48	9911	3.12711	50	10311	0.006805
Phase_2/input_56.txt	254	285	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	58	11083	13.4853	59	11312	0.012386
Phase_2/input_57.txt	167	284	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	42	6691	4.43349	44	7160	0.007517
Phase_2/input_58.txt	132	230	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	31	4855	2.07659	32	4963	0.004743
Phase_2/input_59.txt	180	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	44	7391	5.89049	45	7634	0.007711
Phase_3/input_ 0.txt	500	722	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	108	32442	208.99	113	33414	0.037901
Phase_3/input_ 1.txt	510	971	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	135	33230	0.039588
Phase_3/input_ 2.txt	520	649	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	118	36635	212.479	122	39081	0.040562
Phase_3/input_ 3.txt	530	902	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	130	36816	0.043375
Phase_3/input_ 4.txt	540	851	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	134	41045	0.044964
Phase_3/input_ 5.txt	550	956	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	126	32629	0.043191
Phase_3/input_ 6.txt	560	623	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	135	45308	265.435	144	49876	0.048545
Phase_3/input_ 7.txt	570	845	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	155	44032	0.052479
Phase_3/input_ 8.txt	580	999	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	136	36058	0.051139
Phase_3/input_ 9.txt	590	839	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	130	36266	0.048394
Phase_3/input_10.txt	600	980	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	150	38285	0.052297
Phase_3/input_11.txt	610	721	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	139	40094	0.050071
Phase_3/input_51.txt	977	977	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	248	85006	0.135436
Phase_3/input_52.txt	728	913	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	176	51997	0.07533
Phase_3/input_53.txt	551	968	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	120	29474	0.046009
Phase_3/input_54.txt	613	959	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	151	42504	0.057167
Phase_3/input_55.txt	744	784	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	179	66742	0.086833
Phase_3/input_56.txt	746	950	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	196	61142	0.096928
Phase_3/input_57.txt	773	953	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	195	58395	0.094502
Phase_3/input_58.txt	664	762	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	168	55283	0.073287
Phase_3/input_59.txt	731	875	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	188	60015	0.091512