

# Results

Test	Input sizes		Heuristic BaB			Heuristic BFS			Heuristic Greedy			Exact CP		
	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
Phase_1/input_1.txt	11	11	11	440	0.00193	11	440	0.000599	11	480	0.000595	11	379	1.966683865
Phase_1/input_2.txt	12	12	12	586	0.00382	12	586	0.00054	12	587	0.000228	12	525	2.271491766
Phase_1/input_3.txt	13	13	13	637	0.003006	13	637	0.000526	13	637	0.000256	13	459	0.343653679
Phase_1/input_4.txt	14	14	14	777	0.017988	14	777	0.00094	14	777	0.000207	14	650	0.496277809
Phase_1/input_5.txt	15	15	15	624	0.017779	15	624	0.0007	15	738	0.000188	15	513	2.441635847
Phase_1/input_6.txt	16	16	16	745	0.013308	16	745	0.001061	16	745	0.000206	16	638	1.357476234
Phase_1/input_7.txt	17	17	17	1098	0.089258	17	1124	0.001593	17	1394	0.000234	17	929	39.27156782
Phase_1/input_8.txt	18	18	18	1323	0.179056	18	1323	0.001843	18	1388	0.000268	18	1169	1.302475929
Phase_1/input_9.txt	19	19	19	618	0.019588	19	618	0.001418	19	618	0.000241	19	508	170.0988472
Phase_1/input_10.txt	20	20	20	626	0.016302	20	739	0.001687	20	840	0.000264	20	626	300.5817409
Phase_1/input_11.txt	21	21	21	1297	0.279418	21	1180	0.002245	21	1400	0.000275	21	1023	93.13276863
Phase_1/input_12.txt	22	22	22	1556	0.733084	22	1601	0.003003	22	1812	0.000307	22	1280	300.6107924
Phase_1/input_13.txt	23	23	23	1137	1.5224	23	958	0.00379	23	1384	0.000304	23	937	300.6701977
Phase_1/input_14.txt	24	24	24	1547	2.41217	24	1556	0.005307	24	1882	0.000445	24	1367	300.7935696
Phase_1/input_15.txt	25	25	25	1464	7.50056	25	1447	0.006407	25	1531	0.000356	25	1199	300.6030931
Phase_1/input_16.txt	26	26	26	1938	10.5518	26	1853	0.008196	26	2115	0.000401	N/A	N/A	N/A
Phase_1/input_17.txt	27	27	27	2851	107.306	27	3004	0.008972	27	3392	0.000434	N/A	N/A	N/A
Phase_1/input_18.txt	28	28	28	1400	23.8025	28	1400	0.006065	28	1826	0.000397	N/A	N/A	N/A
Phase_1/input_19.txt	29	29	29	1620	33.118	29	1585	0.006674	29	1689	0.000439	N/A	N/A	N/A
Phase_1/input_20.txt	30	30	N/A	N/A	N/A	30	2444	0.010007	30	2666	0.000517	N/A	N/A	N/A
Phase_1/input_21.txt	31	31	31	1768	23.2625	31	1881	0.008157	31	2032	0.000456	N/A	N/A	N/A
Phase_1/input_22.txt	32	32	32	1557	35.8825	32	1645	0.008687	32	1738	0.000498	N/A	N/A	N/A
Phase_1/input_23.txt	33	33	33	1394	113.718	33	1394	0.009524	33	1673	0.000506	N/A	N/A	N/A
Phase_1/input_24.txt	34	34	N/A	N/A	N/A	34	1858	0.009818	34	1887	0.000788	N/A	N/A	N/A
Phase_1/input_25.txt	35	35	N/A	N/A	N/A	35	2774	0.014589	35	3208	0.000687	N/A	N/A	N/A
Phase_1/input_26.txt	36	36	N/A	N/A	N/A	36	1602	0.011048	36	1602	0.000548	N/A	N/A	N/A
Phase_1/input_27.txt	37	37	N/A	N/A	N/A	37	1842	0.013214	37	2189	0.000605	N/A	N/A	N/A
Phase_1/input_28.txt	38	38	N/A	N/A	N/A	38	2515	0.018492	38	2576	0.000658	N/A	N/A	N/A
Phase_1/input_29.txt	39	39	N/A	N/A	N/A	39	1970	0.018521	39	2056	0.000645	N/A	N/A	N/A
Phase_1/input_30.txt	40	40	N/A	N/A	N/A	40	2380	0.018935	40	2668	0.000699	N/A	N/A	N/A
Phase_1/input_31.txt	41	41	N/A	N/A	N/A	41	2257	0.019793	41	2270	0.000722	N/A	N/A	N/A
Phase_1/input_32.txt	42	42	N/A	N/A	N/A	42	1642	0.018541	42	1764	0.000691	N/A	N/A	N/A
Phase_1/input_33.txt	43	43	N/A	N/A	N/A	43	2038	0.021075	43	2390	0.000703	N/A	N/A	N/A
Phase_1/input_34.txt	44	44	N/A	N/A	N/A	44	2414	0.029004	44	2480	0.000803	N/A	N/A	N/A
Phase_1/input_35.txt	45	45	N/A	N/A	N/A	45	1866	0.0247	45	1871	0.000751	N/A	N/A	N/A
Phase_1/input_36.txt	46	46	N/A	N/A	N/A	46	3830	0.037822	46	4312	0.000877	N/A	N/A	N/A
Phase_1/input_37.txt	47	47	N/A	N/A	N/A	47	1920	0.03407	47	1972	0.000819	N/A	N/A	N/A
Phase_1/input_38.txt	48	48	N/A	N/A	N/A	48	2328	0.058766	48	2819	0.000843	N/A	N/A	N/A
Phase_1/input_39.txt	49	49	N/A	N/A	N/A	49	1892	0.029398	49	1892	0.000844	N/A	N/A	N/A
Phase_1/input_40.txt	50	50	N/A	N/A	N/A	50	2400	0.038673	50	2566	0.000893	N/A	N/A	N/A
Phase_2/input_0.txt	100	100	N/A	N/A	N/A	100	4352	0.360696	100	4539	0.002581	N/A	N/A	N/A
Phase_2/input_1.txt	100	235	N/A	N/A	N/A	100	3342	0.90581	100	3448	0.003002	N/A	N/A	N/A
Phase_2/input_2.txt	100	134	N/A	N/A	N/A	100	5218	0.721128	100	5378	0.003107	N/A	N/A	N/A
Phase_2/input_3.txt	100	122	N/A	N/A	N/A	100	6432	0.70781	100	6752	0.0031	N/A	N/A	N/A
Phase_2/input_4.txt	100	112	N/A	N/A	N/A	100	5543	0.524375	100	5861	0.00269	N/A	N/A	N/A
Phase_2/input_5.txt	100	223	N/A	N/A	N/A	100	3277	0.82329	100	3598	0.002917	N/A	N/A	N/A

Phase_2/input_6.txt	100	271	N/A	N/A	N/A	100	4571	1.48487	100	4598	0.00346	N/A	N/A	N/A
Phase_2/input_7.txt	100	235	N/A	N/A	N/A	100	3100	0.834511	100	3289	0.00304	N/A	N/A	N/A
Phase_2/input_8.txt	100	100	N/A	N/A	N/A	100	4904	0.374629	100	5296	0.002496	N/A	N/A	N/A
Phase_2/input_9.txt	100	188	N/A	N/A	N/A	100	3819	0.838167	100	3896	0.002996	N/A	N/A	N/A
Phase_2/input_10.txt	100	284	N/A	N/A	N/A	100	4157	1.24108	100	4463	0.003432	N/A	N/A	N/A
Phase_2/input_11.txt	110	203	N/A	N/A	N/A	110	3768	0.922542	110	3798	0.003366	N/A	N/A	N/A
Phase_2/input_12.txt	120	237	N/A	N/A	N/A	120	4425	1.72192	120	4609	0.004157	N/A	N/A	N/A
Phase_2/input_13.txt	130	130	N/A	N/A	N/A	130	6616	1.23847	130	7030	0.004339	N/A	N/A	N/A
Phase_2/input_14.txt	140	272	N/A	N/A	N/A	140	5001	2.2916	140	5240	0.005156	N/A	N/A	N/A
Phase_2/input_15.txt	150	217	N/A	N/A	N/A	150	7057	2.85681	150	7271	0.005512	N/A	N/A	N/A
Phase_2/input_16.txt	160	168	N/A	N/A	N/A	160	9911	3.12711	160	10311	0.006805	N/A	N/A	N/A
Phase_2/input_17.txt	170	220	N/A	N/A	N/A	170	9251	4.38135	170	9847	0.007363	N/A	N/A	N/A
Phase_2/input_18.txt	180	296	N/A	N/A	N/A	180	8056	7.43123	180	8476	0.00821	N/A	N/A	N/A
Phase_2/input_19.txt	190	230	N/A	N/A	N/A	190	11069	5.83671	190	11316	0.008738	N/A	N/A	N/A
Phase_2/input_20.txt	200	299	N/A	N/A	N/A	200	7019	6.65435	200	7141	0.008561	N/A	N/A	N/A
Phase_2/input_21.txt	210	283	N/A	N/A	N/A	210	9438	8.94893	210	9586	0.010014	N/A	N/A	N/A
Phase_2/input_22.txt	220	256	N/A	N/A	N/A	220	9780	8.00982	220	9984	0.010272	N/A	N/A	N/A
Phase_2/input_23.txt	230	236	N/A	N/A	N/A	230	11122	9.61699	230	11447	0.011924	N/A	N/A	N/A
Phase_2/input_24.txt	240	261	N/A	N/A	N/A	240	11471	11.7635	240	11687	0.013761	N/A	N/A	N/A
Phase_2/input_25.txt	250	296	N/A	N/A	N/A	250	12657	16.2691	250	13095	0.01438	N/A	N/A	N/A
Phase_2/input_26.txt	260	285	N/A	N/A	N/A	260	12233	14.7325	260	12572	0.015034	N/A	N/A	N/A
Phase_2/input_27.txt	270	277	N/A	N/A	N/A	270	12133	15.3216	270	12314	0.015156	N/A	N/A	N/A
Phase_2/input_28.txt	280	296	N/A	N/A	N/A	280	13256	19.2155	280	13485	0.01663	N/A	N/A	N/A
Phase_2/input_29.txt	290	290	N/A	N/A	N/A	290	13981	20.3142	290	14493	0.017722	N/A	N/A	N/A
Phase_2/input_30.txt	300	300	N/A	N/A	N/A	300	14585	24.6525	300	14872	0.02013	N/A	N/A	N/A
Phase_2/input_31.txt	202	284	N/A	N/A	N/A	202	9495	8.38776	202	9845	0.009985	N/A	N/A	N/A
Phase_2/input_32.txt	160	190	N/A	N/A	N/A	160	7871	3.02305	160	7894	0.00636	N/A	N/A	N/A
Phase_2/input_33.txt	210	288	N/A	N/A	N/A	210	8438	7.83647	210	8898	0.009573	N/A	N/A	N/A
Phase_2/input_34.txt	103	141	N/A	N/A	N/A	103	5723	0.713942	103	6191	0.003096	N/A	N/A	N/A
Phase_2/input_35.txt	134	143	N/A	N/A	N/A	134	7034	1.67471	134	7202	0.004827	N/A	N/A	N/A
Phase_2/input_36.txt	238	278	N/A	N/A	N/A	238	9231	10.3219	238	9625	0.011651	N/A	N/A	N/A
Phase_2/input_37.txt	262	269	N/A	N/A	N/A	262	12994	14.634	262	13414	0.015959	N/A	N/A	N/A
Phase_2/input_38.txt	193	217	N/A	N/A	N/A	193	8357	5.07394	193	8567	0.009003	N/A	N/A	N/A
Phase_2/input_39.txt	103	217	N/A	N/A	N/A	103	4263	0.979595	103	4412	0.003357	N/A	N/A	N/A
Phase_2/input_40.txt	296	296	N/A	N/A	N/A	296	13590	22.7413	296	13904	0.017172	N/A	N/A	N/A
Phase_2/input_41.txt	205	268	N/A	N/A	N/A	205	8818	7.79164	205	8848	0.00937	N/A	N/A	N/A
Phase_2/input_42.txt	292	299	N/A	N/A	N/A	292	13557	20.8602	292	13976	0.017078	N/A	N/A	N/A
Phase_2/input_43.txt	274	290	N/A	N/A	N/A	274	13857	17.9614	274	14270	0.014842	N/A	N/A	N/A
Phase_2/input_44.txt	107	289	N/A	N/A	N/A	107	3824	1.48356	107	3955	0.00342	N/A	N/A	N/A
Phase_2/input_45.txt	256	262	N/A	N/A	N/A	256	11102	12.5021	256	11263	0.012047	N/A	N/A	N/A
Phase_2/input_46.txt	124	283	N/A	N/A	N/A	124	4405	1.8928	124	4503	0.004022	N/A	N/A	N/A
Phase_2/input_47.txt	291	293	N/A	N/A	N/A	291	14779	19.1717	291	15534	0.016263	N/A	N/A	N/A
Phase_2/input_48.txt	277	295	N/A	N/A	N/A	277	13734	20.7309	277	14248	0.015423	N/A	N/A	N/A
Phase_2/input_49.txt	166	181	N/A	N/A	N/A	166	8718	3.28653	166	8925	0.00622	N/A	N/A	N/A
Phase_2/input_50.txt	212	294	N/A	N/A	N/A	212	10761	10.6972	212	11139	0.010121	N/A	N/A	N/A
Phase_2/input_51.txt	266	296	N/A	N/A	N/A	266	14454	21.2771	266	14454	0.014961	N/A	N/A	N/A
Phase_2/input_52.txt	100	134	N/A	N/A	N/A	100	5053	0.688279	100	5503	0.002808	N/A	N/A	N/A
Phase_2/input_53.txt	112	220	N/A	N/A	N/A	112	5426	1.40337	112	5577	0.003542	N/A	N/A	N/A
Phase_2/input_54.txt	193	286	N/A	N/A	N/A	193	9062	7.96427	193	9153	0.00835	N/A	N/A	N/A
Phase_2/input_55.txt	250	292	N/A	N/A	N/A	250	12308	15.8852	250	12728	0.012982	N/A	N/A	N/A

Phase_2/input_56.txt	254	285	N/A	N/A	N/A	254	11083	13.4853	254	11312	0.012386	N/A	N/A	N/A
Phase_2/input_57.txt	167	284	N/A	N/A	N/A	167	6691	4.43349	167	7160	0.007517	N/A	N/A	N/A
Phase_2/input_58.txt	132	230	N/A	N/A	N/A	132	4855	2.07659	132	4963	0.004743	N/A	N/A	N/A
Phase_2/input_59.txt	180	300	N/A	N/A	N/A	180	7391	5.89049	180	7634	0.007711	N/A	N/A	N/A
Phase_3/input_0.txt	500	722	N/A	N/A	N/A	500	32442	208.99	500	33414	0.037901	N/A	N/A	N/A
Phase_3/input_1.txt	510	971	N/A	N/A	N/A	N/A	N/A	N/A	510	33230	0.039588	N/A	N/A	N/A
Phase_3/input_2.txt	520	649	N/A	N/A	N/A	520	36635	212.479	520	39081	0.040562	N/A	N/A	N/A
Phase_3/input_3.txt	530	902	N/A	N/A	N/A	N/A	N/A	N/A	530	36816	0.043375	N/A	N/A	N/A
Phase_3/input_4.txt	540	851	N/A	N/A	N/A	N/A	N/A	N/A	540	41045	0.044964	N/A	N/A	N/A
Phase_3/input_5.txt	550	956	N/A	N/A	N/A	N/A	N/A	N/A	550	32629	0.043191	N/A	N/A	N/A
Phase_3/input_6.txt	560	623	N/A	N/A	N/A	560	45308	265.435	560	49876	0.048545	N/A	N/A	N/A
Phase_3/input_7.txt	570	845	N/A	N/A	N/A	N/A	N/A	N/A	570	44032	0.052479	N/A	N/A	N/A
Phase_3/input_8.txt	580	999	N/A	N/A	N/A	N/A	N/A	N/A	580	36058	0.051139	N/A	N/A	N/A
Phase_3/input_9.txt	590	839	N/A	N/A	N/A	N/A	N/A	N/A	590	36266	0.048394	N/A	N/A	N/A
Phase_3/input_10.txt	600	980	N/A	N/A	N/A	N/A	N/A	N/A	600	38285	0.052297	N/A	N/A	N/A
Phase_3/input_11.txt	610	721	N/A	N/A	N/A	N/A	N/A	N/A	610	40094	0.050071	N/A	N/A	N/A
Phase_3/input_12.txt	620	807	N/A	N/A	N/A	N/A	N/A	N/A	620	52504	0.05951	N/A	N/A	N/A
Phase_3/input_13.txt	630	854	N/A	N/A	N/A	N/A	N/A	N/A	630	46139	0.056799	N/A	N/A	N/A
Phase_3/input_14.txt	640	864	N/A	N/A	N/A	N/A	N/A	N/A	640	58013	0.066937	N/A	N/A	N/A
Phase_3/input_15.txt	650	661	N/A	N/A	N/A	N/A	N/A	N/A	650	51850	0.05801	N/A	N/A	N/A
Phase_3/input_16.txt	660	875	N/A	N/A	N/A	N/A	N/A	N/A	660	44287	0.063807	N/A	N/A	N/A
Phase_3/input_17.txt	670	964	N/A	N/A	N/A	N/A	N/A	N/A	670	49792	0.0672	N/A	N/A	N/A
Phase_3/input_18.txt	680	943	N/A	N/A	N/A	N/A	N/A	N/A	680	45139	0.067073	N/A	N/A	N/A
Phase_3/input_19.txt	690	879	N/A	N/A	N/A	N/A	N/A	N/A	690	58691	0.0734	N/A	N/A	N/A
Phase_3/input_20.txt	700	769	N/A	N/A	N/A	N/A	N/A	N/A	700	53908	0.069809	N/A	N/A	N/A
Phase_3/input_21.txt	710	995	N/A	N/A	N/A	N/A	N/A	N/A	710	53781	0.076515	N/A	N/A	N/A
Phase_3/input_22.txt	720	869	N/A	N/A	N/A	N/A	N/A	N/A	720	59030	0.078274	N/A	N/A	N/A
Phase_3/input_23.txt	730	991	N/A	N/A	N/A	N/A	N/A	N/A	730	55242	0.081234	N/A	N/A	N/A
Phase_3/input_24.txt	740	914	N/A	N/A	N/A	N/A	N/A	N/A	740	53131	0.074472	N/A	N/A	N/A
Phase_3/input_25.txt	750	790	N/A	N/A	N/A	N/A	N/A	N/A	750	68612	0.086037	N/A	N/A	N/A
Phase_3/input_26.txt	760	997	N/A	N/A	N/A	N/A	N/A	N/A	760	55554	0.085148	N/A	N/A	N/A
Phase_3/input_27.txt	770	951	N/A	N/A	N/A	N/A	N/A	N/A	770	58140	0.114145	N/A	N/A	N/A
Phase_3/input_28.txt	780	928	N/A	N/A	N/A	N/A	N/A	N/A	780	68719	0.093936	N/A	N/A	N/A
Phase_3/input_29.txt	790	967	N/A	N/A	N/A	N/A	N/A	N/A	790	58565	0.094513	N/A	N/A	N/A
Phase_3/input_30.txt	800	959	N/A	N/A	N/A	N/A	N/A	N/A	800	62302	0.105298	N/A	N/A	N/A
Phase_3/input_31.txt	810	892	N/A	N/A	N/A	N/A	N/A	N/A	810	72212	0.105258	N/A	N/A	N/A
Phase_3/input_32.txt	820	989	N/A	N/A	N/A	N/A	N/A	N/A	820	63072	0.105869	N/A	N/A	N/A
Phase_3/input_33.txt	830	834	N/A	N/A	N/A	N/A	N/A	N/A	830	78826	0.115572	N/A	N/A	N/A
Phase_3/input_34.txt	840	929	N/A	N/A	N/A	N/A	N/A	N/A	840	70134	0.113343	N/A	N/A	N/A
Phase_3/input_35.txt	850	962	N/A	N/A	N/A	N/A	N/A	N/A	850	68794	0.116322	N/A	N/A	N/A
Phase_3/input_36.txt	860	984	N/A	N/A	N/A	N/A	N/A	N/A	860	73030	0.120915	N/A	N/A	N/A
Phase_3/input_37.txt	870	906	N/A	N/A	N/A	N/A	N/A	N/A	870	76390	0.115952	N/A	N/A	N/A
Phase_3/input_38.txt	880	909	N/A	N/A	N/A	N/A	N/A	N/A	880	73077	0.111351	N/A	N/A	N/A
Phase_3/input_39.txt	890	924	N/A	N/A	N/A	N/A	N/A	N/A	890	78392	0.119967	N/A	N/A	N/A
Phase_3/input_40.txt	900	999	N/A	N/A	N/A	N/A	N/A	N/A	900	78594	0.119409	N/A	N/A	N/A
Phase_3/input_41.txt	910	914	N/A	N/A	N/A	N/A	N/A	N/A	910	81821	0.115624	N/A	N/A	N/A
Phase_3/input_42.txt	920	975	N/A	N/A	N/A	N/A	N/A	N/A	920	84569	0.134218	N/A	N/A	N/A
Phase_3/input_43.txt	930	997	N/A	N/A	N/A	N/A	N/A	N/A	930	75695	0.118972	N/A	N/A	N/A
Phase_3/input_44.txt	940	990	N/A	N/A	N/A	N/A	N/A	N/A	940	77089	0.149362	N/A	N/A	N/A
Phase_3/input_45.txt	950	977	N/A	N/A	N/A	N/A	N/A	N/A	950	91028	0.13249	N/A	N/A	N/A

Phase_3/input_46.txt	960	994	N/A	N/A	N/A	N/A	N/A	N/A	960	89458	0.134436	N/A	N/A	N/A
Phase_3/input_47.txt	970	988	N/A	N/A	N/A	N/A	N/A	N/A	970	100502	0.141912	N/A	N/A	N/A
Phase_3/input_48.txt	980	992	N/A	N/A	N/A	N/A	N/A	N/A	980	87650	0.140229	N/A	N/A	N/A
Phase_3/input_49.txt	990	1000	N/A	N/A	N/A	N/A	N/A	N/A	990	90256	0.14731	N/A	N/A	N/A
Phase_3/input_50.txt	1000	1000	N/A	N/A	N/A	N/A	N/A	N/A	1000	81907	0.134006	N/A	N/A	N/A
Phase_3/input_51.txt	977	977	N/A	N/A	N/A	N/A	N/A	N/A	977	85006	0.135436	N/A	N/A	N/A
Phase_3/input_52.txt	728	913	N/A	N/A	N/A	N/A	N/A	N/A	728	51997	0.07533	N/A	N/A	N/A
Phase_3/input_53.txt	551	968	N/A	N/A	N/A	N/A	N/A	N/A	551	29474	0.046009	N/A	N/A	N/A
Phase_3/input_54.txt	613	959	N/A	N/A	N/A	N/A	N/A	N/A	613	42504	0.057167	N/A	N/A	N/A
Phase_3/input_55.txt	744	784	N/A	N/A	N/A	N/A	N/A	N/A	744	66742	0.086833	N/A	N/A	N/A
Phase_3/input_56.txt	746	950	N/A	N/A	N/A	N/A	N/A	N/A	746	61142	0.096928	N/A	N/A	N/A
Phase_3/input_57.txt	773	953	N/A	N/A	N/A	N/A	N/A	N/A	773	58395	0.094502	N/A	N/A	N/A
Phase_3/input_58.txt	664	762	N/A	N/A	N/A	N/A	N/A	N/A	664	55283	0.073287	N/A	N/A	N/A
Phase_3/input_59.txt	731	875	N/A	N/A	N/A	N/A	N/A	N/A	731	60015	0.091512	N/A	N/A	N/A