

8-Puzzle					15-Puzzle				
Actions	H1	H2	H3	H4	Actions	H1	H2	H3	H4
5	5 0.016	5 0.0001	5 0.0001	5 0.015	10	18 0	25 0.015	28 0	18 0
7	9 0.0001	10 0.0001	11 0.0001	10 0.015	12	14 0	43 0.015	43 0.016	15 0
9	13 0.0001	26 0.0001	27 0.0001	20 0.015	14	24 0	85 0.047	94 0.031	38 0.016
11	33 0.0001	77 0.015	78 0.016	51 0.015	16	28 0	86 0.047	95 0.031	50 0.015
13	22 0.0001	136 0.062	145 0.031	55 0.015	18	38 0.016	491 0.562	569 0.5	105 0.031
15	42 0	309 0.141	350 0.125	105 0.016	20	38 0.016	1042 2	1483 3.281	145 0.047
17	185 0.047	841 0.714	964 0.745	404 0.159	22	389 0.265	6617 67.194	9231 121.124	1586 3.125
19	193 0.047	1980 3.37	2264 3.702	628 0.341	26	375 0.228	27348 115.663	40395 2476.883	2990 9.672
21	451 0.188	4539 15.313	5356 19.758	1663 1.852	28	5255 38.023	- -	- -	- -
23	1128 0.956	11073 87.076	12943 112.422	4105 10.339	30	268 0.128	- -	- -	5789 40.89
24-Puzzle					35-Puzzle				
Actions	H1	H2	H3	H4	Actions	H1	H2	H3	H4
19	63 0.021	146 0.136	164 0.07	76 0.027	19	150 0.09	939 2.905	1482 5.32	319 0.295
21	41 0.012	278 0.354	353 0.298	73 0.026	21	51 0.02	176 0.23	232 0.15	74 0.03
23	297 0.256	14421 541.487	- -	1944 7.459	23	54 0.02	158 0.235	362 0.35	58 0.025
25	194 0.11	14204 474.286	- -	1202 2.538	25	64 0.03	6899 135.42	9653 247.57	508 0.7
27	42 0.012	430 0.843	686 1.107	66 0.027	27	1050 2.525	8329 176.645	13824 464.301	2315 11.12
29	1132 2.713	- -	- -	- -	30	2083 9.765	- -	- -	9443 194.145
31	2791 13.23	- -	- -	14677 371.421	33	883 1.86	- -	- -	3716 27.13
33	80 0.028	- -	- -	- -	36	670 1.27	- -	- -	3487 27.355
35	10245 186.095	- -	- -	- -	41	191 0.11	- -	- -	2436 10.725
40	3355 19.84	- -	- -	- -	45	3195 20.815	- -	- -	- -
48-Puzzle					63-Puzzle				
Actions	H1	H2	H3	H4	Actions	H1	H2	H3	H4
20	23 0.01	38 0.05	41 0.015	30 0.01	20	56 0.025	454 1.075	546 0.905	90 0.05
25	3459 29.385	5168 70.695	12401 405.421	3398 26.59	25	175 0.13	1741 9.335	2344 13.05	260 0.22
30	166 0.115	478 1.17	1178 3.11	237 0.195	31	390 0.465	- -	- -	6852 102.485
34	3625 31.115	- -	- -	11984 331.84	33	5605 99.4	- -	- -	- -
36	351 0.41	9037 251.656	- -	722 1.46	35	386 0.555	- -	- -	223 14.005
38	1319 3.35	- -	- -	2799 15.32	37	2889 24.815	- -	- -	- -
40	3456 30.01	- -	- -	- -	39	234 0.225	682 2.8	4643 55.995	306 0.4
42	2537 14.385	- -	- -	4292 39.715	41	409 0.6	- -	- -	2546 18.616
45	2475 14.245	- -	- -	- -	44	2058 11.391	- -	- -	7773 159.67
47	2156 9.92	- -	- -	12831 376.22	46	1756 6.875	- -	- -	7414 126.831