

Algorithm	Problem	Actions	Expansions	Goal Tests	New Nodes	Time Elapsed	Plan Length
BFS	1	20	43	56	178	0.0024	6
DFS	1	20	21	22	84	0.0013	20
Uniform Cost	1	20	60	62	240	0.0036	6
Greedy - unmet goals	1	20	7	9	29	0.0006	6
Greedy - level sum	1	20	6	8	28	0.0683	6
Greedy - max level	1	20	6	8	24	0.0494	6
Greedy - set level	1	20	6	8	28	0.1977	6
A* - unmet goals	1	20	50	52	206	0.0035	6
A* - level sum	1	20	28	30	122	0.1702	6
A* - max level	1	20	43	45	180	0.1769	6
A* - set level	1	20	33	35	138	0.4655	6
BFS	2	72	3343	4609	30503	0.7794	9
DFS	2	72	624	625	5602	1.1262	619
Uniform Cost	2	72	5154	5156	46618	1.3173	9
Greedy - unmet goals	2	72	17	19	170	0.0080	9
Greedy - level sum	2	72	9	11	86	1.4848	9
Greedy - max level	2	72	27	29	249	2.3234	9
Greedy - set level	2	72	9	11	84	4.9123	9
A* - unmet goals	2	72	2467	2469	22522	0.8854	9
A* - level sum	2	72	357	359	3426	39.9282	9
A* - max level	2	72	2887	2889	26594	231.0565	9
A* - set level	2	72	1037	1039	9605	447.3654	9
BFS	3	88	14663	18098	129625	4.3073	12
DFS	3	88	408	409	3364	0.4360	392
Uniform Cost	3	88	18510	18512	161936	5.7772	12
Greedy - unmet goals	3	88	25	27	230	0.1480	15
Greedy - level sum	3	88	14	16	126	3.4626	14
Greedy - max level	3	88	21	23	195	3.5000	13
Greedy - set level	3	88	35	37	345	27.3175	17
A* - unmet goals	3	88	7388	7390	65711	3.4137	12
A* - level sum	3	88	369	371	3403	74.4104	12
BFS	4	104	99736	114953	944130	38.0722	14
Uniform Cost	4	104	113339	113341	1066413	46.3693	14
Greedy - unmet goals	4	104	29	31	280	0.0237	18

Greedy - level sum	4	104	17	19	165	6.1720	17
A* - unmet goals	4	104	34330	34332	328509	22.2338	14
A* - level sum	4	104	1208	1210	12210	416.6412	15

**Which algorithm or algorithms would be most appropriate for planning in a very restricted domain (i.e., one that has only a few actions) and needs to operate in real time?**

As we have a very restricted domain, we can check the results of the first 2 problems. We can see that most of the algorithms find an optimal path in a short amount of time. We can't include DFS as an answer because although it finds a path in a short amount of time, usually it is not an optimal path. Greedy search with unmet goals heuristic on the other hand, finds the optimal path in the shortest time. So we can use Greedy search with unmet goals heuristic.

**Which algorithm or algorithms would be most appropriate for planning in very large domains (e.g., planning delivery routes for all UPS drivers in the U.S. on a given day)?**

We can check the results for problems 3 and 4. Greedy algorithm with unmet goals heuristic gives us a result in the shortest amount of time. But usually it is not the optimal path. If we want to find the optimal path with sacrificing some time, we can use A\* unmet goals.

**Which algorithm or algorithms would be most appropriate for planning problems where it is important to find only optimal plans?**

BFS, Uniform Cost and A\* - unmet goals algorithms are always giving us the optimal path. So we can go with one of those. A\* - unmet goals algorithm is also time efficient compared to the other two.