Table 1

Problem 1	Actions	Expansions	Goal Tests	New Nodes	Elapsed Time	Plan Length
using breadth_first_search	20	43	56	178	0,0233	6
depth_first_graph_search	20	21	22	84	0,0089	20
uniform_cost_search	20	60	62	240	0,0179	6
h_unmet_goals	20	7	9	29	0,0024	6
h_pg_levelsum	20	6	8	28	0,1839	6
h_pg_maxlevel	20	6	8	24	0,0816	6
h_pg_setlevel	20	6	8	28	0,4106	6
astar_search with h_unmet_goals	20	50	52	206	0,0188	6
astar_search with h_pg_levelsum	20	28	30	122	0,1951	6
astar_search with h_pg_maxlevel	20	43	45	180	0,1156	6
astar_search with h_pg_setlevel	20	33	35	138	0,2679	6
Problem 2						
using breadth_first_search	72	3343	4609	30503	0,3392	9
depth_first_graph_search	72	624	625	5602	0,4743	619
uniform_cost_search	72	5154	5156	46618	0,5529	9
h_unmet_goals	72	17	19	170	0,0191	9
h_pg_levelsum	72	9	11	86	0,6459	9
h_pg_maxlevel	72	27	29	249	0,3802	9
h_pg_setlevel	72	9	11	84	1,3390	9
astar_search with h_unmet_goals	72	2467	2469	22522	0,4631	9
astar_search with h_pg_levelsum	72	357	359	3426	4,8746	9
astar_search with h_pg_maxlevel	72	2887	2889	26594	25,2050	9
astar_search with h_pg_setlevel	72	1037	1039	9605	66,8180	9
Problem 3						
breadth_first_search	88	14663	18098	129625	0,835948	12
h_unmet_goals	88	25	27	230	0,021969	15
h_pg_levelsum	88	14	16	126	0,881623	14
astar_search with h_unmet_goals	88	7388	7390	65711	1,199514	12
astar_search with h_pg_levelsum	88	369	371	3403	9,016453	12
Problem 4						
breadth_first_search	104	99736	114953	944130	4,731311	14
h_unmet_goals	104	29	31	280	0,035700	18
h_pg_levelsum	104	17	19	165	1,285902	17
astar_search with h_unmet_goals	104	104	34330	34332	3,708849	14
astar_search with h_pg_levelsum	104	1208	1210	12210	45,648001	15
Median Data for Expansions, Time and Plan Length for each Problem						
Actions	20	72	88	104		
Median Expensions	28	624	369	104		
Median Time Elapsed	0,0816	0,5529	0,881623	3,708849		
Median Plan Length	6	9	12	15		

Q: 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?

A: The "h_unmet_goals" algorithm would be a good fit for this kind of problem because it can find a solution in a short amount of time. Unfortunately the plan length increases with an increasing amount of actions.

Q: 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)

A: There could be multiple solutions to this problem, depending on the constraints the algorithm has to perform in. Is for example time a constraint most complete and optimal algorithms wouldn't be a great fit. If we look at the "astar_search with h_unmet_goals" in problem 4 it found the optimal plan (14 steps), but was only the third quickest of all the algorithms. On the other hand, the "h_unmet_goals" algorithm was the quickest but it found only a suboptimal plan with 18 steps.

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

A: All A* algorithms because they are complete and optimal.