Problem 1	Actions	Expansions	Goal Tests	New Nodes	Time (seconds)	Plan Length
breadth_first_search	20	21	22	84	0.006355727	6
depth_first_graph_search	20	43	56	178	0.011108289	20
uniform_cost_search	20	60	62	240	0.00989718	6
greedy_best_first_graph_search h_unmet_goals	20	7	9	29	0.001565982	6
greedy_best_first_graph_search h_pg_levelsum	20	6	8	28	0.325560932	6
greedy_best_first_graph_search h_pg_maxlevel	20	6	8	24	0.233997323	6
greedy_best_first_graph_search h_pg_setlevel	20	6	8	28	0.453113839	6
astar_search h_unmet_goals	20	50	52	206	0.009848666	6
astar_search h_pg_levelsum	20	28	30	122	0.876222747	6
astar_search h_pg_maxlevel	20	43	45	180	0.846434203	6
astar_search h_pg_setlevel	20	33	35	138	0.94879855	6

Optimal Plan (Problem 1): greedy_best_first_graph_search h_unmet_goals
Load(C1, P1, SFO)
Load(C2, P2, JFK)
Fly(P2, JFK, SFO)
Unload(C2, P2, SFO)
Fly(P1, SFO, JFK)
Unload(C1, P1, JFK)

Problem 2	Actions	Expansions	Goal Tests	New Nodes	Time (seconds)	Plan Length
breadth_first_search	72	624	625	5602	3.291629482	9
depth_first_graph_search	72	3343	4609	30503	2.300188689	619
uniform_cost_search	72	5154	5156	46618	3.205729793	9
greedy_best_first_graph_search h_unmet_goals	72	17	19	170	0.017246835	9
greedy_best_first_graph_search h_pg_levelsum	72	9	11	86	7.56096131	9
greedy_best_first_graph_search h_pg_maxlevel	72	27	29	249	15.44648431	9
greedy_best_first_graph_search h_pg_setlevel	72	9	11	84	9.90652025	9
astar_search h_unmet_goals	72	2467	2469	22522	2.065308036	9
astar_search h_pg_levelsum	72	357	359	3426	202.2404325	9
astar_search h_pg_maxlevel	72	2887	2889	26594	1190.171357	9
astar_search h_pg_setlevel	72	1037	1039	9605	994.9153341	9

Optimal Plan (Problem 2): greedy_best_first_graph_search h_unmet_goals
Load(C1, P1, SFO)
Load(C2, P2, JFK)
Load(C3, P3, ATL)
Fly(P2, JFK, SFO)
Unload(C2, P2, SFO)
Fly(P3, ATL, SFO)
Unload(C3, P3, SFO)
Fly(P1, SFO, JFK)
Unload(C1, P1, JFK)

Problem 3	Actions	Expansions	Goal Tests	New Nodes	Time (seconds)	Plan Length
depth_first_graph_search	88	408	409	3364	1.128578791	392
greedy_best_first_graph_search h_unmet_goals	88	25	27	230	0.038725085	15
greedy_best_first_graph_search h_pg_levelsum	88	14	16	126	17.35873529	14
astar_search h_unmet_goals	88	7388	7390	65711	8.348548879	12
astar_search h_pg_levelsum	88	369	371	3403	328.2547807	12

Optimal Plan (Problem 3): astar_search h_unmet_goals
Load(C2, P2, JFK)
Fly(P2, JFK, ATL)
Load(C3, P2, ATL)
Fly(P2, ATL, ORD)
Load(C4, P2, ORD)
Fly(P2, ORD, SFO)
Unload(C4, P2, SFO)
Unload(C2, P2, SFO)
Load(C1, P2, SFO)
Fly(P2, SFO, JFK)
Unload(C3, P2, JFK)
Unload(C1, P2, JFK)

Problem 4	Actions	Expansions	Goal Tests	New Nodes	Time (seconds)	Plan Length
depth_first_graph_search	104	25174	25175	228849	4273.978935	24132
greedy_best_first_graph_search h_unmet_goals	104	29	31	280	0.046940527	18
greedy_best_first_graph_search h_pg_levelsum	104	17	19	165	26.89762438	17
astar_search h_unmet_goals	104	34330	34332	328509	44.31202048	14
astar_search h_pg_levelsum	104	1208	1210	12210	1768.782966	15

Optimal Plan (Problem 4): astar_search h_unmet_goals
Load(C2, P2, JFK)
Fly(P2, JFK, ATL)
Load(C3, P2, ATL)
Fly(P2, ATL, ORD)
Load(C4, P2, ORD)
Load(C5, P2, ORD)
Fly(P2, ORD, SFO)
Unload(C4, P2, SFO)
Unload(C2, P2, SFO)
Load(C1, P2, SFO)
Fly(P2, SFO, JFK)
Unload(C5, P2, JFK)
Unload(C3, P2, JFK)
Unload(C1, P2, JFK)

Question 1: 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?

It would recommend to use either *breadth_first_search*, *uniform_cost_search*, *greedy_best_first_graph_search h_unmet_goals*, or *astar_search h_unmet_goals* due to the rapid computation time and small plan length with a preference for *greedy_best_first_graph_search h_unmet_goals*. Depending on computation time constraint, any of the algorithms would be a good recommendation excluding *depth_first_graph_search*.

Question 2: 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)

It would be recommended using *greedy_best_first_graph_search h_unmet_goals* due to the rapid computation time and relatively small plan length. Calculating and considering computation time is an essential parameter to consider especially if a company is considering to adopt the algorithm for a vast domain such as all the UPS deliveries.

Question 3: Which algorithm or algorithms would be most appropriate for planning problems where it is important to find only optimal plans?

It would be recommended to use *astar_search h_unmet_goals* for planning problems where the optimal plan is a mandatory requirement.