

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

greedy\_best\_first\_graph\_search h\_unmet\_goals

**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)**

greedy\_best\_first\_graph\_search h\_unmet\_goals

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

For restricted domains, I would not use depth\_first\_graph\_search. The other algorithms all seem to have different strengths so I would choose one based on what metric was important to me.

For large domains, I would use astar\_search h\_unmet\_goals.



breadth\_first\_search  
depth\_first\_graph\_search  
uniform\_cost\_search  
greedy\_best\_first\_graph\_search h\_unmet\_goals  
greedy\_best\_first\_graph\_search h\_pg\_levelsum  
greedy\_best\_first\_graph\_search h\_pg\_maxlevel  
greedy\_best\_first\_graph\_search h\_pg\_setlevel  
astar\_search h\_unmet\_goals  
astar\_search h\_pg\_levelsum  
astar\_search h\_pg\_maxlevel  
astar\_search h\_pg\_setlevel

Air Cargo Problem 1						
# Actions	Expansions	Goal Tests	New Nodes	Time	Plan length	
20	43	56	178	0.004425517	6	
20	21	22	84	0.002810969	20	
20	60	62	240	0.009206513	6	
20	7	9	29	0.001263654	6	
20	6	8	28	0.251574422	6	
20	6	8	24	0.188282471	6	
20	6	8	28	0.324637618	6	
20	50	52	206	0.007290587	6	
20	28	30	122	0.598175485	6	
20	43	45	180	0.661728302	6	
20	33	35	138	0.718829199	6	

breadth\_first\_search  
depth\_first\_graph\_search  
uniform\_cost\_search  
greedy\_best\_first\_graph\_search h\_unmet\_goals  
greedy\_best\_first\_graph\_search h\_pg\_levelsum  
greedy\_best\_first\_graph\_search h\_pg\_maxlevel  
greedy\_best\_first\_graph\_search h\_pg\_setlevel  
astar\_search h\_unmet\_goals  
astar\_search h\_pg\_levelsum  
astar\_search h\_pg\_maxlevel  
astar\_search h\_pg\_setlevel

Air Cargo Problem 2						
# Actions	Expansions	Goal Tests	New Nodes	Time	Plan length	
72	3343	4609	30503	1.396721271	9	
72	624	625	5602	2.194277348	619	
72	5154	5156	46618	2.723929278	9	
72	17	19	170	0.013032127	9	
72	9	11	86	6.003312876	9	
72	27	29	249	11.24422633	9	
72	9	11	84	7.538850466	9	
72	2467	2469	22522	1.754493083	9	
72	357	359	3426	140.3935985	9	
72	2887	2889	26594	767.1742883	9	
72	1037	1039	9605	683.1555048	9	

breathn\_first\_search  
depth\_first\_graph\_search  
uniform\_cost\_search  
greedy\_best\_first\_graph\_search h\_unmet\_goals  
greedy\_best\_first\_graph\_search h\_pg\_levelsum  
greedy\_best\_first\_graph\_search h\_pg\_maxlevel  
greedy\_best\_first\_graph\_search h\_pg\_setlevel  
astar\_search h\_unmet\_goals  
astar\_search h\_pg\_levelsum  
astar\_search h\_pg\_maxlevel  
astar\_search h\_pg\_setlevel

breathn\_first\_search  
depth\_first\_graph\_search  
uniform\_cost\_search  
greedy\_best\_first\_graph\_search h\_unmet\_goals  
greedy\_best\_first\_graph\_search h\_pg\_levelsum  
greedy\_best\_first\_graph\_search h\_pg\_maxlevel  
greedy\_best\_first\_graph\_search h\_pg\_setlevel  
astar\_search h\_unmet\_goals  
astar\_search h\_pg\_levelsum  
astar\_search h\_pg\_maxlevel  
astar\_search h\_pg\_setlevel

Air Cargo Problem 3						
# Actions	Expansions	Goal Tests	New Nodes	Time	Plan length	
88	14663	18098	129625	8.531778877	12	
88	408	409	3364	0.728504438	392	
88	18510	18512	161936	10.51343857	12	
88	25	27	230	0.027147726	15	
88	14	16	126	11.68567141	14	
88	21	23	195	15.97737023	13	
88	35	37	345	39.79208618	17	
88	7388	7390	65711	5.658423956	12	
88	369	371	3403	230.0419798	12	
88	3423	3425	31596	3709.065042	12	
88	9580	9582	86312	3988.972573	12	

Air Cargo Problem 4						
# Actions	Expansions	Goal Tests	New Nodes	Time	Plan length	
104	99736	114953	944130	64.3282784	14	
104	25174	25175	228849	2271.129509	24132	
104	113339	113341	1066413	83.06901273	14	
104	29	31	280	0.047746101	18	
104	17	19	165	22.93438395	17	
104	56	58	580	51.85821095	17	
104	107	109	1164	206.8114254	23	
104	34330	34332	328509	40.81601865	14	
104	1208	1210	12210	1303.829082	15	