

Puzzle Number	Algorithm	Heuristic	Length of the Solution	Length of the Search	Execution Time (in seconds)	Board
1	UCS	NA	5	147	0.97772511	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	GBFS	h1	5	29	0.124681567	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	GBFS	h2	5	29	0.124994787	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	GBFS	h3	5	29	0.12525804	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	GBFS	h4	5	29	0.12614089	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	A/A*	h1	5	93	0.537132849	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	A/A*	h2	5	93	0.540816079	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	A/A*	h3	5	93	0.549686069	DDD....CCEE.HHAAI..FB.I..FB.GG.....
1	A/A*	h4	5	93	0.55161643	DDD....CCEE.HHAAI..FB.I..FB.GG.....
2	UCS	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	GBFS	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	GBFS	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	GBFS	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	GBFS	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	A/A*	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	A/A*	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	A/A*	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
2	A/A*	NA	NA	NA	NA	CCCHH...IGG.AAIE....DEB...DFB....FB.
3	UCS	NA	3	30	0.106859197	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	GBFS	h1	3	6	0.027867832	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	GBFS	h2	3	6	0.027508228	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	GBFS	h3	3	6	0.027902766	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	GBFS	h4	3	6	0.02790005399	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	A/A*	h1	3	11	0.04092463	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	A/A*	h2	3	6	0.02769355899	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	A/A*	h3	3	11	0.04039592799	.HEEF..H..F.AACC..DII...DBBBG.D...G.
3	A/A*	h4	3	11	0.040251834	.HEEF..H..F.AACC..DII...DBBBG.D...G.
4	UCS	NA	5	990	22.03722379	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	GBFS	h1	5	13	0.209707324	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	GBFS	h2	5	13	0.207496704	GGG.BBIID...AADHHX..D....E.FC..E.FC.

4	GBFS	h3	5	13	0.210493687	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	GBFS	h4	5	13	0.206657315	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	A/A*	h1	5	139	1.879507909	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	A/A*	h2	5	34	0.468375695	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	A/A*	h3	5	139	1.876472461	GGG.BBIID...AADHHX..D....E.FC..E.FC.
4	A/A*	h4	5	70	1.060213716	GGG.BBIID...AADHHX..D....E.FC..E.FC.
5	UCS	NA	3	24	0.12572278	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	GBFS	h1	3	7	0.03371235701	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	GBFS	h2	3	7	0.033538922	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	GBFS	h3	3	7	0.03358984999	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	GBFS	h4	3	7	0.03399987299	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	A/A*	h1	3	11	0.049594415	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	A/A*	h2	3	11	0.049489949	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	A/A*	h3	3	11	0.049187671	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
5	A/A*	h4	3	11	0.04973079399	...F..BIIF..BAAE..HGDEC.HGD.C.....C.
6	UCS	NA	3	23	0.07966877501	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	GBFS	h1	3	9	0.032075305	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	GBFS	h2	3	9	0.031647585	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	GBFS	h3	3	9	0.03194873199	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	GBFS	h4	3	9	0.031856924	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	A/A*	h1	3	13	0.041383266	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	A/A*	h2	3	9	0.031933045	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	A/A*	h3	3	13	0.04139274599	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
6	A/A*	h4	3	13	0.04166657299	.BBBII.HHFF..AAGG..C.DEE.C.D...C.D..
7	UCS	NA	8	1590	21.74589601	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	GBFS	h1	8	622	7.000025641	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	GBFS	h2	8	622	6.912153672	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	GBFS	h3	8	622	6.954061084	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	GBFS	h4	8	622	6.906114953	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	A/A*	h1	8	1262	16.44703597	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...
7	A/A*	h2	8	1262	17.00767779	.EEGGGDD..IAA..I.H.FFF.H.C.BB..C...

7	A/A*	h3		8	1262	16.87512728	.EEGGGDD..I.AA..I.H.FFF.H.C.BB..C...
7	A/A*	h4		8	1262	15.90766051	.EEGGGDD..I.AA..I.H.FFF.H.C.BB..C...
8	UCS	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	GBFS	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	GBFS	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	GBFS	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	GBFS	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	A/A*	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	A/A*	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	A/A*	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
8	A/A*	NA	NA	NA	NA		...EEE..BGF.AABGF.D..H..DCCHIID..H..
9	UCS	NA		3	31	0.15686359	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	GBFS	h1		3	7	0.02730305001	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	GBFS	h2		3	7	0.026941598	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	GBFS	h3		3	7	0.02692678101	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	GBFS	h4		3	7	0.02666870899	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	A/A*	h1		3	15	0.05471208	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	A/A*	h2		3	15	0.055508046	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	A/A*	h3		3	15	0.05644936999	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
9	A/A*	h4		3	15	0.055545642	FDDG..F..GIIF.AAB..HH.B.C.EE..C.....
10	UCS	NA		4	109	0.713105725	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	GBFS	h1		4	7	0.03406617499	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	GBFS	h2		4	7	0.03358541199	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	GBFS	h3		4	7	0.033634975	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	GBFS	h4		4	7	0.03363057799	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	A/A*	h1		4	35	0.182260717	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	A/A*	h2		4	35	0.179327467	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	A/A*	h3		4	35	0.182147297	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
10	A/A*	h4		4	35	0.179318254	GDD.B.G..HB.IAAHC.I...C.FFF.....EEE
11	UCS	NA		3	53	0.323644854	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	GBFS	h1		3	9	0.05211553301	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...

11	GBFS	h2	3	9	0.051479417	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	GBFS	h3	3	9	0.05161854399	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	GBFS	h4	3	9	0.05249939801	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	A/A*	h1	3	18	0.09196995401	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	A/A*	h2	3	9	0.053987244	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	A/A*	h3	3	18	0.09098586699	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
11	A/A*	h4	3	18	0.091739863	.CCCG..DD.G.AA.BB.IFF...I.HEE.I.H...
12	UCS	NA	6	217	1.571157335	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	GBFS	h1	6	12	0.05948782399	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	GBFS	h2	6	12	0.05912951101	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	GBFS	h3	6	12	0.05903281301	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	GBFS	h4	6	12	0.05924816801	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	A/A*	h1	6	112	0.670154813	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	A/A*	h2	6	112	0.673211834	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	A/A*	h3	6	112	0.683948401	CDDII.CFFE..CAA EH.G...H.G.BBB.....
12	A/A*	h4	6	112	0.680998057	CDDII.CFFE..CAA EH.G...H.G.BBB.....
13	UCS	NA	4	42	0.219248028	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	GBFS	h1	4	7	0.033740082	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	GBFS	h2	4	7	0.033885664	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	GBFS	h3	4	7	0.033656803	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	GBFS	h4	4	7	0.03311664899	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	A/A*	h1	4	40	0.205249324	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	A/A*	h2	4	40	0.202840504	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	A/A*	h3	4	40	0.206033222	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
13	A/A*	h4	4	40	0.203470099	BI.CC.BI..G.AA..G...EEE.DDDHF....HF.
14	UCS	NA	3	52	0.311559822	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	GBFS	h1	3	11	0.06628229801	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	GBFS	h2	3	11	0.06704073401	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	GBFS	h3	3	11	0.06502171	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	GBFS	h4	3	11	0.06603950201	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	A/A*	h1	3	19	0.09904634001	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...

14	A/A*	h2	3	19	0.09856383699	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	A/A*	h3	3	19	0.097430294	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
14	A/A*	h4	3	19	0.096594249	CC..D.GFF.D.GAA.B..EIIB..EH.B...H...
15	UCS	NA	4	77	0.364642085	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	GBFS	h1	4	15	0.061247997	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	GBFS	h2	4	15	0.06078718801	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	GBFS	h3	4	15	0.06123735	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	GBFS	h4	4	15	0.06263991199	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	A/A*	h1	4	37	0.150291993	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	A/A*	h2	4	37	0.15084651	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	A/A*	h3	4	37	0.148975634	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
15	A/A*	h4	4	37	0.151603089	.BBFFFCHHGGGC.AAI.....I.E.DDD.E.....
16	UCS	NA	4	264	2.528397876	G.II..GDDD..HAACB.HEECB...F.B...F...
16	GBFS	h1	4	13	0.113364518	G.II..GDDD..HAACB.HEECB...F.B...F...
16	GBFS	h2	4	13	0.113325863	G.II..GDDD..HAACB.HEECB...F.B...F...
16	GBFS	h3	4	13	0.114099056	G.II..GDDD..HAACB.HEECB...F.B...F...
16	GBFS	h4	4	13	0.115121374	G.II..GDDD..HAACB.HEECB...F.B...F...
16	A/A*	h1	4	53	0.38807955	G.II..GDDD..HAACB.HEECB...F.B...F...
16	A/A*	h2	4	53	0.387453781	G.II..GDDD..HAACB.HEECB...F.B...F...
16	A/A*	h3	4	53	0.391165444	G.II..GDDD..HAACB.HEECB...F.B...F...
16	A/A*	h4	4	53	0.39024985	G.II..GDDD..HAACB.HEECB...F.B...F...
17	UCS	NA	3	69	0.53831715	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	GBFS	h1	3	9	0.057382156	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	GBFS	h2	3	9	0.05888439801	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	GBFS	h3	3	9	0.056926298	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	GBFS	h4	3	9	0.05764870699	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	A/A*	h1	3	18	0.105421232	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	A/A*	h2	3	18	0.105031772	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	A/A*	h3	3	18	0.106005842	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
17	A/A*	h4	3	18	0.104199523	GG.B..EEEBF..AA.F..HC.D.IHC.D.I.C...
18	UCS	NA	4	140	1.025412069	.D.GG.BDHHF.B.AAF.B..C...EECII...C..

18	GBFS	h1		4	13	0.077759388	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	GBFS	h2		4	13	0.07739290199	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	GBFS	h3		4	13	0.078536139	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	GBFS	h4		4	13	0.078684319	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	A/A*	h1		4	64	0.376008731	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	A/A*	h2		4	64	0.3716362	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	A/A*	h3		4	64	0.374201751	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
18	A/A*	h4		4	64	0.373172707	.D.GG.BDHHF.B.AAF.B..C...EECII...C..
19	UCS	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	GBFS	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	GBFS	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	GBFS	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	GBFS	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	A/A*	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	A/A*	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	A/A*	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
19	A/A*	NA	NA	NA	NA		..EEB.DD..B.AAFHB...FHIIGGCC...C.....
20	UCS	NA		3	30	0.117531541	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	GBFS	h1		3	7	0.02499666701	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	GBFS	h2		3	7	0.02437050901	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	GBFS	h3		3	7	0.02472464299	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	GBFS	h4		3	7	0.025026173	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	A/A*	h1		3	14	0.046031509	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	A/A*	h2		3	14	0.048639703	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	A/A*	h3		3	14	0.04614534801	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
20	A/A*	h4		3	14	0.04507771801	BBB....EE.H.FFAAH..I..C.GIDDC.G...C.
21	UCS	NA	NA	NA	NA		..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	GBFS	NA	NA	NA	NA		..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	GBFS	NA	NA	NA	NA		..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	GBFS	NA	NA	NA	NA		..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	GBFS	NA	NA	NA	NA		..DHH.IIDFFFAA..B.EE..B..CCCG.....G.

21	A/A*	NA	NA	NA	NA	..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	A/A*	NA	NA	NA	NA	..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	A/A*	NA	NA	NA	NA	..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
21	A/A*	NA	NA	NA	NA	..DHH.IIDFFFAA..B.EE..B..CCCG.....G.
22	UCS	NA	3	78	0.561033277	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	GBFS	h1	3	14	0.09880763901	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	GBFS	h2	3	14	0.098118929	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	GBFS	h3	3	14	0.099093989	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	GBFS	h4	3	14	0.097422669	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	A/A*	h1	3	25	0.153585864	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	A/A*	h2	3	25	0.152747528	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	A/A*	h3	3	25	0.154504366	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
22	A/A*	h4	3	25	0.152353312	.EE.GGD..BB.DAA.C.DHH.C..IFFC..I....
23	UCS	NA	4	155	1.018183274	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	GBFS	h1	4	10	0.07985530799	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	GBFS	h2	4	10	0.080844924	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	GBFS	h3	4	10	0.079802824	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	GBFS	h4	4	10	0.080601337	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	A/A*	h1	4	28	0.171932654	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	A/A*	h2	4	10	0.07987012601	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	A/A*	h3	4	28	0.170485448	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
23	A/A*	h4	4	18	0.130973956	.BBB....FFI.AADDI.HEEE..HCCCG.....G.
24	UCS	NA	3	40	0.193281317	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	GBFS	h1	3	7	0.02963750401	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	GBFS	h2	3	7	0.029894416	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	GBFS	h3	3	7	0.02939286099	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	GBFS	h4	3	7	0.02947110101	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	A/A*	h1	3	15	0.05663216101	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	A/A*	h2	3	15	0.057356348	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	A/A*	h3	3	15	0.058151262	FF.I..C..I..C.AAD..GGED.HBBED.H.....
24	A/A*	h4	3	15	0.05740204401	FF.I..C..I..C.AAD..GGED.HBBED.H.....

25	UCS	NA	3	69	0.514909319	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	GBFS	h1	3	12	0.08577339801	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	GBFS	h2	3	12	0.08311573	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	GBFS	h3	3	12	0.082923372	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	GBFS	h4	3	12	0.083139544	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	A/A*	h1	3	23	0.13994343	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	A/A*	h2	3	12	0.083412971	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	A/A*	h3	3	23	0.140486683	..HHBB..DD..AACC..GEEE..GIFFF..I....
25	A/A*	h4	3	23	0.140660255	..HHBB..DD..AACC..GEEE..GIFFF..I....
26	UCS	NA	7	591	5.131056276	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	GBFS	h1	7	216	1.322569907	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	GBFS	h2	7	216	1.317545562	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	GBFS	h3	7	216	1.305643545	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	GBFS	h4	7	216	1.309382367	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	A/A*	h1	7	440	3.542929505	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	A/A*	h2	7	440	3.534200391	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	A/A*	h3	7	440	3.543565779	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
26	A/A*	h4	7	440	3.549055211	D.HEEEDFH.C..FAAC....BBBG...I.G...I.
27	UCS	NA	3	40	0.229728328	.....EEFF.AADD.GBB...GIHHCC.I....
27	GBFS	h1	3	8	0.04141099	.....EEFF.AADD.GBB...GIHHCC.I....
27	GBFS	h2	3	8	0.04115688801	.....EEFF.AADD.GBB...GIHHCC.I....
27	GBFS	h3	3	8	0.040562397	.....EEFF.AADD.GBB...GIHHCC.I....
27	GBFS	h4	3	8	0.040577919	.....EEFF.AADD.GBB...GIHHCC.I....
27	A/A*	h1	3	18	0.085177228	.....EEFF.AADD.GBB...GIHHCC.I....
27	A/A*	h2	3	8	0.042077879	.....EEFF.AADD.GBB...GIHHCC.I....
27	A/A*	h3	3	18	0.084220558	.....EEFF.AADD.GBB...GIHHCC.I....
27	A/A*	h4	3	18	0.084797445	.....EEFF.AADD.GBB...GIHHCC.I....
28	UCS	NA	4	75	0.439816254	.FFBBB...EEEEAC.....C.G.HIDDG.HI....
28	GBFS	h1	4	7	0.03947962901	.FFBBB...EEEEAC.....C.G.HIDDG.HI....
28	GBFS	h2	4	7	0.03744245699	.FFBBB...EEEEAC.....C.G.HIDDG.HI....
28	GBFS	h3	4	7	0.03717170699	.FFBBB...EEEEAC.....C.G.HIDDG.HI....

28	GBFS	h4	4	7	0.03747072299	.FFBBB...EEEEAAC.....C.G.HIDDG.HI....
28	A/A*	h1	4	38	0.182785893	.FFBBB...EEEEAAC.....C.G.HIDDG.HI....
28	A/A*	h2	4	38	0.185933182	.FFBBB...EEEEAAC.....C.G.HIDDG.HI....
28	A/A*	h3	4	38	0.188316531	.FFBBB...EEEEAAC.....C.G.HIDDG.HI....
28	A/A*	h4	4	38	0.180319009	.FFBBB...EEEEAAC.....C.G.HIDDG.HI....
29	UCS	NA	3	52	0.300101524	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	GBFS	h1	3	8	0.042581214	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	GBFS	h2	3	8	0.041881037	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	GBFS	h3	3	8	0.04212394499	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	GBFS	h4	3	8	0.042151785	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	A/A*	h1	3	17	0.08309945201	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	A/A*	h2	3	17	0.083853602	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	A/A*	h3	3	17	0.082895154	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
29	A/A*	h4	3	17	0.08356967299	.CC...E...G.EAA.G.DFB.H.DFBIH.DFBI..
30	UCS	NA	4	64	0.291969879	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	GBFS	h1	4	7	0.042507433	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	GBFS	h2	4	7	0.041727459	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	GBFS	h3	4	7	0.041476624	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	GBFS	h4	4	7	0.04175268201	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	A/A*	h1	4	23	0.103236798	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	A/A*	h2	4	13	0.067109738	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	A/A*	h3	4	23	0.102470277	...G.....G..AACDD.EIC.BBEICHFF.I.H..
30	A/A*	h4	4	18	0.090371835	...G.....G..AACDD.EIC.BBEICHFF.I.H..
31	UCS	NA	5	157	1.084595647	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	GBFS	h1	5	24	0.114273613	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	GBFS	h2	5	24	0.112684597	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	GBFS	h3	5	24	0.114021361	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	GBFS	h4	5	24	0.113177113	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	A/A*	h1	5	107	0.671825338	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	A/A*	h2	5	107	0.66160423	..HHFF.BBBG.AA..G..DDDII.ECC...E....
31	A/A*	h3	5	107	0.660708946	..HHFF.BBBG.AA..G..DDDII.ECC...E....

31	A/A*	h4	5	107	0.660768794	..HHFF.BBBG.AA..G..DDDII.ECC...E....
32	UCS	NA	3	55	0.272429996	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	GBFS	h1	3	8	0.04130027299	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	GBFS	h2	3	8	0.040536977	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	GBFS	h3	3	8	0.040166518	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	GBFS	h4	3	8	0.04011716401	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	A/A*	h1	3	14	0.066066026	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	A/A*	h2	3	14	0.066751291	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	A/A*	h3	3	14	0.06556592701	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
32	A/A*	h4	3	14	0.06560312501	..CH..GGCHBBAA..E....FE.ID.FE.ID.F..
33	UCS	NA	5	328	3.123854566	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	GBFS	h1	5	27	0.161130177	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	GBFS	h2	5	27	0.161415636	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	GBFS	h3	5	27	0.159462428	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	GBFS	h4	5	27	0.162736284	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	A/A*	h1	5	192	1.58918865	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	A/A*	h2	5	192	1.575636336	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	A/A*	h3	5	192	1.578085232	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
33	A/A*	h4	5	192	1.571536045	..CCHH..FFE.AA..E.G.BBB.G.D.IIG.D...
34	UCS	NA	7	1652	24.01094805	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	GBFS	h1	7	526	5.678702516	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	GBFS	h2	7	526	5.666883509	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	GBFS	h3	7	526	5.700238241	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	GBFS	h4	7	526	5.649185759	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	A/A*	h1	7	1086	14.35117885	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	A/A*	h2	7	1086	14.19102434	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	A/A*	h3	7	1086	14.17965833	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
34	A/A*	h4	7	1086	14.18658028	CCCGG..BBB..AA..F...IIF.E.DDHHE.....
35	UCS	NA	11	1494	23.28511249	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	GBFS	h1	11	562	6.741602656	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	GBFS	h2	11	562	6.89083219	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..

35	GBFS	h3	11	562	6.824873441	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	GBFS	h4	11	562	6.766314745	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	A/A*	h1	11	1074	14.74324581	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	A/A*	h2	11	1074	14.76349969	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	A/A*	h3	11	1074	15.01700717	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
35	A/A*	h4	11	1074	14.87171093	.B.....B..C...AAC.DFFFC.DGHIEE.GHI..
36	UCS	NA	4	43	0.180438502	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	GBFS	h1	4	9	0.04088788301	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	GBFS	h2	4	9	0.040913769	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	GBFS	h3	4	9	0.040870254	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	GBFS	h4	4	9	0.040311035	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	A/A*	h1	4	20	0.073376518	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	A/A*	h2	4	20	0.074380003	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	A/A*	h3	4	20	0.074763137	...BI.EE.BI..AACH.DDDCH.GGFC....F..
36	A/A*	h4	4	20	0.074056365	...BI.EE.BI..AACH.DDDCH.GGFC....F..
37	UCS	NA	4	148	1.157783349	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	GBFS	h1	4	13	0.088298635	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	GBFS	h2	4	13	0.086962891	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	GBFS	h3	4	13	0.08857400301	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	GBFS	h4	4	13	0.087933866	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	A/A*	h1	4	61	0.38295579	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	A/A*	h2	4	61	0.381893966	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	A/A*	h3	4	61	0.38120177	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
37	A/A*	h4	4	61	0.383901549	DDD.....HH.GAA.F.G.BBF.EECCI.....I.
38	UCS	NA	4	405	4.282682054	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	GBFS	h1	4	9	0.078396394	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	GBFS	h2	4	9	0.077095981	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	GBFS	h3	4	9	0.07775315101	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	GBFS	h4	4	9	0.078860557	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	A/A*	h1	4	41	0.329406976	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	A/A*	h2	4	41	0.331704793	FF.....HH...AAEG...CEGD.ICEBD.IC.B..

38	A/A*	h3	4	41	0.329480495	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
38	A/A*	h4	4	41	0.33038739	FF.....HH...AAEG...CEGD.ICEBD.IC.B..
39	UCS	NA	4	93	0.558776565	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	GBFS	h1	4	12	0.08002164999	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	GBFS	h2	4	12	0.079067518	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	GBFS	h3	4	12	0.080045243	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	GBFS	h4	4	12	0.08034127401	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	A/A*	h1	4	36	0.19088876	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	A/A*	h2	4	36	0.19091765	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	A/A*	h3	4	36	0.194218515	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
39	A/A*	h4	4	36	0.191245361	FFCCHH.DD.B.AA.GB.EEEGB.I.....I.....
40	UCS	NA	4	114	0.688063508	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	GBFS	h1	4	8	0.05450349	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	GBFS	h2	4	8	0.053550526	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	GBFS	h3	4	8	0.05373459701	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	GBFS	h4	4	8	0.054416096	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	A/A*	h1	4	32	0.172333623	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	A/A*	h2	4	32	0.171987254	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	A/A*	h3	4	32	0.171400131	DD..E....CE..AACB.FF..B.HHIGB...IG..
40	A/A*	h4	4	32	0.172836858	DD..E....CE..AACB.FF..B.HHIGB...IG..
41	UCS	NA	7	138	0.763047996	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	GBFS	h1	8	19	0.110715085	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	GBFS	h2	8	19	0.110081419	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	GBFS	h3	8	19	0.111970889	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	GBFS	h4	8	19	0.109853935	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	A/A*	h1	7	114	0.610920535	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	A/A*	h2	7	114	0.610456395	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	A/A*	h3	7	114	0.607726434	.IBG...IBGD.AABGD.FFEE....CCH.....H.
41	A/A*	h4	7	114	0.60627569	.IBG...IBGD.AABGD.FFEE....CCH.....H.
42	UCS	NA	3	91	0.769094742	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	GBFS	h1	3	14	0.106843888	.EEFF..B.DDDGBAAC.G.IHC...IHC.....

42	GBFS	h2	3	14	0.109092757	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	GBFS	h3	3	14	0.108939417	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	GBFS	h4	3	14	0.108023798	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	A/A*	h1	3	26	0.175827153	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	A/A*	h2	3	26	0.177091387	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	A/A*	h3	3	26	0.1739983	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
42	A/A*	h4	3	26	0.176585726	.EEFF..B.DDDGBAAC.G.IHC...IHC.....
43	UCS	NA	6	224	1.425388177	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	GBFS	h1	6	19	0.098587926	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	GBFS	h2	6	19	0.09944223201	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	GBFS	h3	6	19	0.09873275501	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	GBFS	h4	6	19	0.097994553	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	A/A*	h1	6	124	0.687996093	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	A/A*	h2	6	124	0.704049671	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	A/A*	h3	6	124	0.695923272	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
43	A/A*	h4	6	124	0.693363345	..FFDDB.....BAAEC.B.GEC.I.GEHHI.....
44	UCS	NA	4	139	0.899588869	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	GBFS	h1	4	7	0.03381619	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	GBFS	h2	4	7	0.03246682699	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	GBFS	h3	4	7	0.03351147199	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	GBFS	h4	4	7	0.03483351599	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	A/A*	h1	4	25	0.120645779	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	A/A*	h2	4	25	0.120037657	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	A/A*	h3	4	25	0.119675799	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
44	A/A*	h4	4	25	0.120537676	H...CCHIIF..AA.FB.E.D.B.E.DGB.E.DG..
45	UCS	NA	3	43	0.210890771	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	GBFS	h1	3	9	0.038298093	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	GBFS	h2	3	9	0.03778384799	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	GBFS	h3	3	9	0.03846769	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	GBFS	h4	3	9	0.037973828	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	A/A*	h1	3	17	0.06774172401	BBFFIIHHEEE.CAA.G.C...G...DD.....

45	A/A*	h2	3	17	0.06778621201	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	A/A*	h3	3	17	0.06802064201	BBFFIIHHEEE.CAA.G.C...G...DD.....
45	A/A*	h4	3	17	0.06825612301	BBFFIIHHEEE.CAA.G.C...G...DD.....
46	UCS	NA	8	213	1.218193192	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	GBFS	h1	8	186	1.045883176	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	GBFS	h2	8	186	1.062503769	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	GBFS	h3	8	186	1.041584757	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	GBFS	h4	8	186	1.046841397	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	A/A*	h1	8	211	1.207046311	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	A/A*	h2	8	211	1.220229187	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	A/A*	h3	8	211	1.215157573	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
46	A/A*	h4	8	211	1.206831781	.B..C..BDDC..BAAC.I.EEGGIF.FH.....
47	UCS	NA	5	98	0.576156373	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	GBFS	h1	5	10	0.0445438	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	GBFS	h2	5	10	0.044135103	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	GBFS	h3	5	10	0.04446552701	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	GBFS	h4	5	10	0.04433622499	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	A/A*	h1	5	30	0.139782725	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	A/A*	h2	5	30	0.139224153	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	A/A*	h3	5	30	0.138721279	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
47	A/A*	h4	5	30	0.140513763	....H.GGFEH.AAFE..CIIE..C.DBB.C.D...
48	UCS	NA	4	92	0.523559725	G...HHG.FB..AAFB...EEED.CCCID....I..
48	GBFS	h1	4	7	0.033291605	G...HHG.FB..AAFB...EEED.CCCID....I..
48	GBFS	h2	4	7	0.032928291	G...HHG.FB..AAFB...EEED.CCCID....I..
48	GBFS	h3	4	7	0.032967654	G...HHG.FB..AAFB...EEED.CCCID....I..
48	GBFS	h4	4	7	0.032888067	G...HHG.FB..AAFB...EEED.CCCID....I..
48	A/A*	h1	4	19	0.08522441199	G...HHG.FB..AAFB...EEED.CCCID....I..
48	A/A*	h2	4	19	0.084440986	G...HHG.FB..AAFB...EEED.CCCID....I..
48	A/A*	h3	4	19	0.08600800599	G...HHG.FB..AAFB...EEED.CCCID....I..
48	A/A*	h4	4	19	0.08548355399	G...HHG.FB..AAFB...EEED.CCCID....I..
49	UCS	NA	4	16	0.03928871901	D.IICCDFFH..DAAH..BB.EEE....G.....G.

49	GBFS	h1	4	6	0.013424641	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	GBFS	h2	4	6	0.01325927701	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	GBFS	h3	4	6	0.013362727	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	GBFS	h4	4	6	0.013573579	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	A/A*	h1	4	14	0.03390424101	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	A/A*	h2	4	14	0.034021328	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	A/A*	h3	4	14	0.034002713	D.IICCDFFH..DAAH..BB.EEE....G.....G.
49	A/A*	h4	4	14	0.03435134099	D.IICCDFFH..DAAH..BB.EEE....G.....G.
50	UCS	NA	7	422	3.834749715	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	GBFS	h1	7	153	1.176200024	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	GBFS	h2	7	153	1.162316909	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	GBFS	h3	7	153	1.146535534	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	GBFS	h4	7	153	1.146653878	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	A/A*	h1	7	293	2.390197321	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	A/A*	h2	7	293	2.373076659	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	A/A*	h3	7	293	2.414899108	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
50	A/A*	h4	7	293	2.420317591	CCCG...D.GF..DAAF.HH..F.B.EEIIB.....
51	UCS	NA	7	186	1.511440164	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	GBFS	h1	8	15	0.108738464	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	GBFS	h2	8	15	0.107618166	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	GBFS	h3	8	15	0.108744147	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	GBFS	h4	8	15	0.107934195	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	A/A*	h1	7	73	0.442324008	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	A/A*	h2	7	73	0.430532736	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	A/A*	h3	7	73	0.605051235	.GIIH..GFCH.AAFCE..BBCE...DDE.....
51	A/A*	h4	7	73	0.522776501	.GIIH..GFCH.AAFCE..BBCE...DDE.....