

1564 A Ride in the Snow



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Instructions

Thank you for choosing Golden Kite products!
We hope you will have lots of fun with this cross-stitch pattern!

Fabric

Press the fabric with an iron if needed. A good thing to prevent the fabric from fraying is to machine zigzag the edges.

On large patterns, it is easiest to start from the upper left corner of the design. Make sure you have the proper margins before starting and that the fabric piece is of the correct size. The best way to verify this is to count all stitch positions on the fabric from the upper left corner downwards and to the right to make sure there is enough space for the design.

Some prefer to start in the center of the design instead. To locate the center of the fabric, fold the fabric in half both vertically and horizontally. The center is located where these two folds meet.

Stitches

Each length of DMC tread consists of six strands.
Use two of these strands for all stitches.

Note that some colors may be mixes (or blends) between two different pure colors. In that case take one strand of the two colors each and thread the two strands into the needle at the same time for stitching.

All stitches are full cross-stitches. No half-stitching and no back-stitching is necessary in this pattern.

All cross-stitches will be worked into the holes in the fabric from left to right. Always use the larger holes in the fabric for the stitches. Adjacent stitches should meet in the same hole. Make sure all stitches cross in the same direction.

Please be careful when washing the finished embroidery! The cotton thread may bleed when washed. Only hand wash it in lukewarm water. Remove excess water by roll it in a towel and lay it flat to air dry. Natural fabrics may shrink slightly when washed. We do not recommend washing the embroidery if not absolutely necessary and we take no responsibility for any damage that may occur.

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A Ride in the Snow

Stitch Count	
Horizontal:	632
Vertical:	411

Recommended Fabric Color
Antique White.

This table tells the size of the pattern (without any margins) and the size of the fabric required to stitch the pattern (including recommended margins). 3 inch margins have been added on each side in the 'Including Margins' row.

The sizes are given for 14, 16 and 18 stitches per inch fabrics.

Make sure to use the 'Including Margins' row when cutting the piece of fabric to be used. Also make sure that 3 inch margins are enough for your stitching technique and add more margin areas if necessary.

	14				16				18			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	115	45	75	29,25	100	39,37	65	25,59	89	35	58	22,75
Including Margins:	131	52	91	36	116	46	81	32	105	42	74	29
	10				12				24			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	161	63	105	40,95	134	52,5	87	34,12	67	26,25	43	17,06
Including Margins:	177	70	121	47	150	59	103	41	83	33	59	24
	25				26				27			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	64	25,2	42	16,38	61	24,23	40	15,75	59	23,33	38	15,16
Including Margins:	80	32	58	23	77	31	56	22	75	30	54	22
	28				30				32			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	57	22,5	37	14,62	53	21	35	13,65	50	19,68	32	12,79
Including Margins:	73	29	53	21	69	28	51	20	66	26	48	19

Solid Color Stitches. Use two strands of the specified color for these stitches.

Symbol	DMC	Name
▷	225	Shell Pink-UL VY LT
◐	317	Pewter Gray
⌘	370	Mustard-MD
⌘	372	Mustard-LT
◐	413	Pewter Gray-DK
⌘	414	Steel Gray-DK
⌘	415	Pearl Gray
⌘	451	Shell Gray-DK
⌘	452	Shell Gray-MD
☆	453	Shell Gray-LT
⊕	503	Blue Green-MD
✓	524	Fern Green-VY LT
◐	535	Ash Gray-VY LT
◐	543	Beige Brown-UL VY LT
◐	610	Drab Brown-DK
◐	611	Drab Brown
◐	612	Drab Brown-LT
◐	613	Drab Brown-VY LT
+	632	Desert Sand-UL VY DK
//	640	Beige Gray-VY DK
×	642	Beige Gray-DK
m	644	Beige Gray-MD
*	645	Beaver Gray-VY DK
◐	646	Beaver Gray-DK
◐	647	Beaver Gray-MD
◐	648	Beaver Gray-LT
^	712	Cream
::	738	Tan-VY LT
e	739	Tan-UL VY LT
«	746	Off White
±	762	Pearl Gray-VY LT
◐	775	Baby Blue-VY LT
◐	801	Coffee Brown-DK
~	819	Baby Pink-LT
9	822	Beige Gray-LT
◐	838	Beige Brown-VY DK
←	839	Beige Brown-DK
٪	841	Beige Brown-LT
—	842	Beige Brown-VY LT
♣	844	Beaver Brown-UL DK
⊗	898	Coffee Brown-VY DK
▲	926	Gray Green-MD
≡	927	Gray Green-LT
↑	928	Gray Green-VY LT
◈	931	Antique Blue-MD
◈	932	Antique Blue-LT
■	934	Black Avocado Green
◐	935	Avocado Green-DK
⋮	936	Avocado Green-VY DK
●	938	Coffee Brown-UL DK
L	948	Peach-VY LT
:	951	Tawny-LT
▼	975	Golden Brown-DK

✕	3011	Khaki Green-DK
↓	3021	Brown Gray-VY DK
⊙	3022	Brown Gray-MD
↶	3023	Brown Gray-LT
↵	3024	Brown Gray-VY LT
●	3031	Mocha Brown-VY DK
☑	3032	Mocha Brown-MD
5	3033	Mocha Brown-VY LT
/	3072	Beaver Gray-VY LT
(	3756	Baby Blue-UL VY LT
Φ	3768	Gray Green-DK
↑	3770	Tawny-VY LT
⬆	3772	Desert Sand-VY DK
◇	3774	Desert Sand-VY LT
■	3781	Mocha Brown-DK
◡	3782	Mocha Brown-LT
♠	3787	Brown Gray-DK
↔	3790	Beige Gray-UL DK
⦿	3799	Pewter Gray-VY DK
▶	3809	Turquoise-VY DK
⋯	3810	Turquoise-DK
	3823	Yellow-UL Pale
♣	3828	Hazelnut Brown
●	3860	Cocoa
☐	3861	Cocoa-LT
▀	3862	Mocha Beige-DK
⬇	3863	Mocha Beige-MD
=	3864	Mocha Beige-LT
1	3865	Winter White
⇒	3866	Mocha Brown-UL VY LT
□	Ecru	Ecru

Blend Stitches. Use one strand of each of DMC1 and DMC2 for these stitches.				
Symbol	DMC1	Name1	DMC2	Name2
u	1	White 1	3865	Winter White
■	221	Shell Pink-VY DK	3772	Desert Sand-VY DK
τ	223	Shell Pink-LT	524	Fern Green-VY LT
⊕	223	Shell Pink-LT	612	Drab Brown-LT
•	223	Shell Pink-LT	3864	Mocha Beige-LT
■	310	Black	3021	Brown Gray-VY DK
◀	317	Pewter Gray	3809	Turquoise-VY DK
☉	317	Pewter Gray	3861	Cocoa-LT
‡	318	Steel Gray-LT	414	Steel Gray-DK
✂	356	Terra Cotta-MD	223	Shell Pink-LT
z	356	Terra Cotta-MD	371	Mustard
☪	371	Mustard	3864	Mocha Beige-LT
◎	407	Desert Sand-DK	452	Shell Gray-MD
▲	413	Pewter Gray-DK	3362	Pine Green-DK
•	415	Pearl Gray	3752	Antique Blue-VY LT
⊕	451	Shell Gray-DK	3861	Cocoa-LT
△	452	Shell Gray-MD	613	Drab Brown-VY LT
#	452	Shell Gray-MD	3023	Brown Gray-LT
√	453	Shell Gray-LT	543	Beige Brown-UL VY LT

+	453	Shell Gray-LT	648	Beaver Gray-LT
⊕	503	Blue Green-MD	451	Shell Gray-DK
↘	524	Fern Green-VY LT	642	Beige Gray-DK
✦	524	Fern Green-VY LT	3864	Mocha Beige-LT
•	543	Beige Brown-UL VY LT	746	Off White
⊕	610	Drab Brown-DK	839	Beige Brown-DK
2	612	Drab Brown-LT	543	Beige Brown-UL VY LT
❖	612	Drab Brown-LT	975	Golden Brown-DK
✱	612	Drab Brown-LT	3863	Mocha Beige-MD
⊗	613	Drab Brown-VY LT	3774	Desert Sand-VY LT
✦	632	Desert Sand-UL VY DK	371	Mustard
⬤	632	Desert Sand-UL VY DK	801	Coffee Brown-DK
⊙	632	Desert Sand-UL VY DK	830	Golden Olive-DK
⬤	632	Desert Sand-UL VY DK	840	Beige Brown-MD
⬤	632	Desert Sand-UL VY DK	3772	Desert Sand-VY DK
■	632	Desert Sand-UL VY DK	3860	Cocoa
▲	640	Beige Gray-VY DK	645	Beaver Gray-VY DK
⬤	640	Beige Gray-VY DK	926	Gray Green-MD
⊙	640	Beige Gray-VY DK	3860	Cocoa
⊗	642	Beige Gray-DK	927	Gray Green-LT
✕	642	Beige Gray-DK	3813	Blue Green-LT
⊕	644	Beige Gray-MD	648	Beaver Gray-LT
⊗	645	Beaver Gray-VY DK	926	Gray Green-MD
✕	645	Beaver Gray-VY DK	3052	Green Gray-MD
=	645	Beaver Gray-VY DK	3860	Cocoa
↖	647	Beaver Gray-MD	3861	Cocoa-LT
∇	648	Beaver Gray-LT	452	Shell Gray-MD
••	648	Beaver Gray-LT	3817	Celadon Green-LT
◊	712	Cream	746	Off White
<	712	Cream	762	Pearl Gray-VY LT
○	712	Cream	3072	Beaver Gray-VY LT
⊗	730	Olive Green-VY DK	3362	Pine Green-DK
7	738	Tan-VY LT	739	Tan-UL VY LT
0	754	Peach-LT	3823	Yellow-UL Pale
4	762	Pearl Gray-VY LT	3072	Beaver Gray-VY LT
♡	762	Pearl Gray-VY LT	3756	Baby Blue-UL VY LT
◀	793	Cornflower Blue-MD	3849	Teal Green-LT
n	819	Baby Pink-LT	3865	Winter White
✱	829	Golden Olive-VY DK	632	Desert Sand-UL VY DK
✕	838	Beige Brown-VY DK	3021	Brown Gray-VY DK
♥	838	Beige Brown-VY DK	3799	Pewter Gray-VY DK
♣	839	Beige Brown-DK	844	Beaver Brown-UL DK
✕	839	Beige Brown-DK	3021	Brown Gray-VY DK
↓	839	Beige Brown-DK	3051	Green Gray-DK
⬤	839	Beige Brown-DK	3787	Brown Gray-DK
★	840	Beige Brown-MD	3772	Desert Sand-VY DK
➔	844	Beaver Brown-UL DK	3021	Brown Gray-VY DK
⬤	844	Beaver Brown-UL DK	3051	Green Gray-DK
▨	844	Beaver Brown-UL DK	3787	Brown Gray-DK
↑	844	Beaver Brown-UL DK	3799	Pewter Gray-VY DK
✦	898	Coffee Brown-VY DK	3790	Beige Gray-UL DK
↘	927	Gray Green-LT	503	Blue Green-MD
III	927	Gray Green-LT	928	Gray Green-VY LT
Λ	927	Gray Green-LT	932	Antique Blue-LT
田	927	Gray Green-LT	3864	Mocha Beige-LT
H	928	Gray Green-VY LT	932	Antique Blue-LT
⊗	930	Antique Blue-DK	3848	Teal Green-MD
➤	931	Antique Blue-MD	932	Antique Blue-LT
✦	931	Antique Blue-MD	3809	Turquoise-VY DK

☼	931	Antique Blue-MD	3849	Teal Green-LT
\$	932	Antique Blue-LT	3849	Teal Green-LT
↩	948	Peach-VY LT	543	Beige Brown-UL VY LT
)	951	Tawny-LT	3823	Yellow-UL Pale
●	975	Golden Brown-DK	3772	Desert Sand-VY DK
✱	3012	Khaki Green-MD	3051	Green Gray-DK
◆	3021	Brown Gray-VY DK	3031	Mocha Brown-VY DK
§	3023	Brown Gray-LT	3817	Celadon Green-LT
✕	3032	Mocha Brown-MD	3790	Beige Gray-UL DK
☐	3072	Beaver Gray-VY LT	3743	Antique Violet-VY LT
?	3072	Beaver Gray-VY LT	3752	Antique Blue-VY LT
♂	3072	Beaver Gray-VY LT	3866	Mocha Brown-UL VY LT
♂	3753	Antique Blue-UL VY LT	3072	Beaver Gray-VY LT
∞	3756	Baby Blue-UL VY LT	819	Baby Pink-LT
○	3782	Mocha Brown-LT	842	Beige Brown-VY LT
☞	3808	Turquoise-UL VY DK	3768	Gray Green-DK
☾	3809	Turquoise-VY DK	3810	Turquoise-DK
‡	3861	Cocoa-LT	503	Blue Green-MD
‡	3861	Cocoa-LT	3864	Mocha Beige-LT
‡	3866	Mocha Brown-UL VY LT	762	Pearl Gray-VY LT
○	3866	Mocha Brown-UL VY LT	3865	Winter White

This table specifies how much thread of each color is required to stitch this pattern. It is good to know that one complete DMC skein contains 313 inches (795 cm) thread.

DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		14		16		18	
1	White 1	628	247	598	235	538	211
221	Shell Pink-VY DK	2	1	2	1	2	1
223	Shell Pink-LT	33	12	31	12	28	11
225	Shell Pink-UL VY LT	13	5	12	4	11	4
310	Black	265	104	253	99	227	89
317	Pewter Gray	63	24	60	23	54	21
318	Steel Gray-LT	11	4	11	4	10	3
356	Terra Cotta-MD	11	4	10	3	9	3
370	Mustard-MD	23	9	22	8	20	7
371	Mustard	66	25	63	24	56	22
372	Mustard-LT	29	11	28	11	25	9
407	Desert Sand-DK	11	4	11	4	10	3
413	Pewter Gray-DK	53	20	50	19	45	17
414	Steel Gray-DK	38	14	37	14	33	12
415	Pearl Gray	82	32	78	30	70	27
451	Shell Gray-DK	457	179	435	171	392	154
452	Shell Gray-MD	1719	676	1637	644	1473	579
453	Shell Gray-LT	3028	1192	2884	1135	2595	1021
503	Blue Green-MD	764	300	728	286	655	257
524	Fern Green-VY LT	1186	466	1129	444	1016	400
535	Ash Gray-VY LT	148	58	141	55	127	50
543	Beige Brown-UL VY LT	1444	568	1375	541	1237	487
610	Drab Brown-DK	222	87	212	83	190	74
611	Drab Brown	79	31	76	29	68	26
612	Drab Brown-LT	190	74	181	71	162	63
613	Drab Brown-VY LT	563	221	536	211	482	189
632	Desert Sand-UL VY DK	145	57	138	54	125	49
640	Beige Gray-VY DK	722	284	688	270	619	243
642	Beige Gray-DK	1071	421	1020	401	918	361
644	Beige Gray-MD	851	335	810	318	729	287
645	Beaver Gray-VY DK	786	309	748	294	673	264
646	Beaver Gray-DK	566	222	539	212	485	190
647	Beaver Gray-MD	957	376	911	358	820	322
648	Beaver Gray-LT	5541	2181	5277	2077	4750	1870
712	Cream	1786	703	1701	669	1531	602
730	Olive Green-VY DK	10	3	10	3	9	3
738	Tan-VY LT	30	11	28	11	25	9
739	Tan-UL VY LT	93	36	88	34	79	31
746	Off White	715	281	681	268	613	241
754	Peach-LT	5	1	5	1	4	1
762	Pearl Gray-VY LT	1728	680	1646	648	1481	583
775	Baby Blue-VY LT	34	13	33	12	29	11
793	Cornflower Blue-MD	2	1	2	1	2	1
801	Coffee Brown-DK	68	26	65	25	58	22
819	Baby Pink-LT	3441	1354	3278	1290	2950	1161
822	Beige Gray-LT	806	317	767	301	691	272
829	Golden Olive-VY DK	8	3	8	3	7	2
830	Golden Olive-DK	14	5	13	5	12	4
838	Beige Brown-VY DK	363	142	345	135	311	122
839	Beige Brown-DK	742	292	707	278	636	250
840	Beige Brown-MD	52	20	49	19	44	17
841	Beige Brown-LT	117	46	111	43	100	39
842	Beige Brown-VY LT	199	78	190	74	171	67

844	Beaver Brown-UL DK	1073	422	1022	402	920	362
898	Coffee Brown-VY DK	103	40	98	38	88	34
926	Gray Green-MD	298	117	284	111	256	100
927	Gray Green-LT	1559	613	1485	584	1336	525
928	Gray Green-VY LT	966	380	920	362	828	325
930	Antique Blue-DK	5	1	4	1	4	1
931	Antique Blue-MD	49	19	46	18	42	16
932	Antique Blue-LT	36	14	34	13	31	12
934	Black Avocado Green	57	22	54	21	48	18
935	Avocado Green-DK	103	40	98	38	88	34
936	Avocado Green-VY DK	27	10	26	10	23	9
938	Coffee Brown-UL DK	79	31	76	29	68	26
948	Peach-VY LT	336	132	320	125	288	113
951	Tawny-LT	178	70	169	66	152	59
975	Golden Brown-DK	32	12	31	12	28	11
3011	Khaki Green-DK	10	3	9	3	8	3
3012	Khaki Green-MD	12	4	11	4	10	3
3021	Brown Gray-VY DK	1250	492	1191	468	1072	422
3022	Brown Gray-MD	689	271	656	258	590	232
3023	Brown Gray-LT	1396	549	1330	523	1197	471
3024	Brown Gray-VY LT	2960	1165	2819	1109	2537	998
3031	Mocha Brown-VY DK	228	89	217	85	196	77
3032	Mocha Brown-MD	390	153	372	146	335	131
3033	Mocha Brown-VY LT	476	187	453	178	408	160
3051	Green Gray-DK	196	77	187	73	168	66
3052	Green Gray-MD	81	31	77	30	69	27
3072	Beaver Gray-VY LT	3397	1337	3235	1273	2911	1146
3362	Pine Green-DK	44	17	42	16	38	14
3743	Antique Violet-VY LT	167	65	159	62	143	56
3752	Antique Blue-VY LT	59	23	56	22	50	19
3753	Antique Blue-UL VY LT	71	27	68	26	61	24
3756	Baby Blue-UL VY LT	700	275	667	262	600	236
3768	Gray Green-DK	18	7	17	6	15	5
3770	Tawny-VY LT	27	10	26	10	23	9
3772	Desert Sand-VY DK	62	24	59	23	53	20
3774	Desert Sand-VY LT	350	137	333	131	300	118
3781	Mocha Brown-DK	83	32	79	31	71	27
3782	Mocha Brown-LT	173	68	165	64	149	58
3787	Brown Gray-DK	1025	403	977	384	879	346
3790	Beige Gray-UL DK	469	184	447	175	402	158
3799	Pewter Gray-VY DK	594	233	565	222	509	200
3808	Turquoise-UL VY DK	2	1	2	1	2	1
3809	Turquoise-VY DK	31	12	29	11	26	10
3810	Turquoise-DK	5	1	5	1	4	1
3813	Blue Green-LT	162	63	154	60	139	54
3817	Celadon Green-LT	689	271	656	258	591	232
3823	Yellow-UL Pale	100	39	95	37	85	33
3828	Hazelnut Brown	12	4	11	4	10	3
3848	Teal Green-MD	5	1	4	1	4	1
3849	Teal Green-LT	23	9	22	8	20	7
3860	Cocoa	324	127	308	121	278	109
3861	Cocoa-LT	1116	439	1063	418	956	376
3862	Mocha Beige-DK	76	29	72	28	65	25
3863	Mocha Beige-MD	188	74	179	70	161	63
3864	Mocha Beige-LT	773	304	737	290	663	261
3865	Winter White	14386	5663	13701	5394	12331	4854
3866	Mocha Brown-UL VY LT	3441	1354	3277	1290	2949	1161
Ecru	Ecru	113	44	108	42	97	38

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		10		12		24	
1	White 1	968	380	807	317	404	158
221	Shell Pink-VY DK	4	2	3	2	2	1
223	Shell Pink-LT	50	20	42	17	21	8
225	Shell Pink-UL VY LT	20	7	17	6	8	3
310	Black	409	160	341	134	170	67
317	Pewter Gray	97	38	81	32	41	16
318	Steel Gray-LT	18	5	15	5	8	2
356	Terra Cotta-MD	16	5	14	5	7	2
370	Mustard-MD	36	13	30	11	15	5
371	Mustard	101	40	84	33	42	17
372	Mustard-LT	45	16	38	14	19	7
407	Desert Sand-DK	18	5	15	5	8	2
413	Pewter Gray-DK	81	31	68	26	34	13
414	Steel Gray-DK	59	22	50	18	25	9
415	Pearl Gray	126	49	105	41	53	20
451	Shell Gray-DK	706	277	588	231	294	116
452	Shell Gray-MD	2651	1042	2210	869	1105	434
453	Shell Gray-LT	4671	1838	3893	1532	1946	766
503	Blue Green-MD	1179	463	983	386	491	193
524	Fern Green-VY LT	1829	720	1524	600	762	300
535	Ash Gray-VY LT	229	90	191	75	95	38
543	Beige Brown-UL VY LT	2227	877	1856	731	928	365
610	Drab Brown-DK	342	133	285	111	143	56
611	Drab Brown	122	47	102	39	51	20
612	Drab Brown-LT	292	113	243	95	122	47
613	Drab Brown-VY LT	868	340	723	284	362	142
632	Desert Sand-UL VY DK	225	88	188	74	94	37
640	Beige Gray-VY DK	1114	437	929	365	464	182
642	Beige Gray-DK	1652	650	1377	542	689	271
644	Beige Gray-MD	1312	517	1094	431	547	215
645	Beaver Gray-VY DK	1211	475	1010	396	505	198
646	Beaver Gray-DK	873	342	728	285	364	143
647	Beaver Gray-MD	1476	580	1230	483	615	242
648	Beaver Gray-LT	8550	3366	7125	2805	3563	1403
712	Cream	2756	1084	2297	903	1148	452
730	Olive Green-VY DK	16	5	14	5	7	2
738	Tan-VY LT	45	16	38	14	19	7
739	Tan-UL VY LT	142	56	119	47	59	23
746	Off White	1103	434	920	362	460	181
754	Peach-LT	7	2	6	2	3	1
762	Pearl Gray-VY LT	2666	1049	2222	875	1111	437
775	Baby Blue-VY LT	52	20	44	17	22	8
793	Cornflower Blue-MD	4	2	3	2	2	1
801	Coffee Brown-DK	104	40	87	33	44	17
819	Baby Pink-LT	5310	2090	4425	1742	2213	871
822	Beige Gray-LT	1244	490	1037	408	518	204
829	Golden Olive-VY DK	13	4	11	3	5	2
830	Golden Olive-DK	22	7	18	6	9	3
838	Beige Brown-VY DK	560	220	467	183	233	92
839	Beige Brown-DK	1145	450	954	375	477	188
840	Beige Brown-MD	79	31	66	26	33	13
841	Beige Brown-LT	180	70	150	59	75	29
842	Beige Brown-VY LT	308	121	257	101	128	50

844	Beaver Brown-UL DK	1656	652	1380	543	690	272
898	Coffee Brown-VY DK	158	61	132	51	66	26
926	Gray Green-MD	461	180	384	150	192	75
927	Gray Green-LT	2405	945	2004	788	1002	394
928	Gray Green-VY LT	1490	585	1242	488	621	244
930	Antique Blue-DK	7	2	6	2	3	1
931	Antique Blue-MD	76	29	63	24	32	12
932	Antique Blue-LT	56	22	47	18	23	9
934	Black Avocado Green	86	32	72	27	36	14
935	Avocado Green-DK	158	61	132	51	66	26
936	Avocado Green-VY DK	41	16	35	14	17	7
938	Coffee Brown-UL DK	122	47	102	39	51	20
948	Peach-VY LT	518	203	432	170	216	85
951	Tawny-LT	274	106	228	89	114	44
975	Golden Brown-DK	50	20	42	17	21	8
3011	Khaki Green-DK	14	5	12	5	6	2
3012	Khaki Green-MD	18	5	15	5	8	2
3021	Brown Gray-VY DK	1930	760	1608	633	804	317
3022	Brown Gray-MD	1062	418	885	348	443	174
3023	Brown Gray-LT	2155	848	1796	707	898	353
3024	Brown Gray-VY LT	4567	1796	3806	1497	1903	749
3031	Mocha Brown-VY DK	353	139	294	116	147	58
3032	Mocha Brown-MD	603	236	503	197	251	98
3033	Mocha Brown-VY LT	734	288	612	240	306	120
3051	Green Gray-DK	302	119	252	99	126	50
3052	Green Gray-MD	124	49	104	41	52	20
3072	Beaver Gray-VY LT	5240	2063	4367	1719	2183	860
3362	Pine Green-DK	68	25	57	21	29	11
3743	Antique Violet-VY LT	257	101	215	84	107	42
3752	Antique Blue-VY LT	90	34	75	29	38	14
3753	Antique Blue-UL VY LT	110	43	92	36	46	18
3756	Baby Blue-UL VY LT	1080	425	900	354	450	177
3768	Gray Green-DK	27	9	23	8	11	4
3770	Tawny-VY LT	41	16	35	14	17	7
3772	Desert Sand-VY DK	95	36	80	30	40	15
3774	Desert Sand-VY LT	540	212	450	177	225	89
3781	Mocha Brown-DK	128	49	107	41	53	20
3782	Mocha Brown-LT	268	104	224	87	112	44
3787	Brown Gray-DK	1582	623	1319	519	659	260
3790	Beige Gray-UL DK	724	284	603	237	302	119
3799	Pewter Gray-VY DK	916	360	764	300	382	150
3808	Turquoise-UL VY DK	4	2	3	2	2	1
3809	Turquoise-VY DK	47	18	39	15	20	8
3810	Turquoise-DK	7	2	6	2	3	1
3813	Blue Green-LT	250	97	209	81	104	41
3817	Celadon Green-LT	1064	418	887	348	443	174
3823	Yellow-UL Pale	153	59	128	50	64	25
3828	Hazelnut Brown	18	5	15	5	8	2
3848	Teal Green-MD	7	2	6	2	3	1
3849	Teal Green-LT	36	13	30	11	15	5
3860	Cocoa	500	196	417	164	209	82
3861	Cocoa-LT	1721	677	1434	564	717	282
3862	Mocha Beige-DK	117	45	98	38	49	19
3863	Mocha Beige-MD	290	113	242	95	121	47
3864	Mocha Beige-LT	1193	470	995	392	497	196
3865	Winter White	22196	8737	18497	7281	9248	3641
3866	Mocha Brown-UL VY LT	5308	2090	4424	1742	2212	871
Ecru	Ecru	175	68	146	57	73	29

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		25		26		27	
1	White 1	387	152	372	146	359	141
221	Shell Pink-VY DK	1	1	1	1	1	1
223	Shell Pink-LT	20	8	19	8	19	7
225	Shell Pink-UL VY LT	8	3	8	3	7	3
310	Black	163	64	157	62	151	59
317	Pewter Gray	39	15	37	15	36	14
318	Steel Gray-LT	7	2	7	2	7	2
356	Terra Cotta-MD	6	2	6	2	6	2
370	Mustard-MD	14	5	14	5	13	5
371	Mustard	40	16	39	15	37	15
372	Mustard-LT	18	6	17	6	17	6
407	Desert Sand-DK	7	2	7	2	7	2
413	Pewter Gray-DK	32	12	31	12	30	11
414	Steel Gray-DK	24	9	23	8	22	8
415	Pearl Gray	50	19	48	19	47	18
451	Shell Gray-DK	282	111	271	107	261	103
452	Shell Gray-MD	1061	417	1020	401	982	386
453	Shell Gray-LT	1868	735	1797	707	1730	681
503	Blue Green-MD	472	185	453	178	437	171
524	Fern Green-VY LT	732	288	703	277	677	267
535	Ash Gray-VY LT	91	36	88	35	85	33
543	Beige Brown-UL VY LT	891	351	856	337	825	325
610	Drab Brown-DK	137	53	132	51	127	49
611	Drab Brown	49	19	47	18	45	17
612	Drab Brown-LT	117	45	112	44	108	42
613	Drab Brown-VY LT	347	136	334	131	321	126
632	Desert Sand-UL VY DK	90	35	87	34	83	33
640	Beige Gray-VY DK	446	175	429	168	413	162
642	Beige Gray-DK	661	260	636	250	612	241
644	Beige Gray-MD	525	207	505	199	486	191
645	Beaver Gray-VY DK	485	190	466	183	449	176
646	Beaver Gray-DK	349	137	336	132	323	127
647	Beaver Gray-MD	590	232	568	223	547	215
648	Beaver Gray-LT	3420	1346	3288	1295	3167	1247
712	Cream	1102	433	1060	417	1021	401
730	Olive Green-VY DK	6	2	6	2	6	2
738	Tan-VY LT	18	6	17	6	17	6
739	Tan-UL VY LT	57	22	55	21	53	21
746	Off White	441	174	424	167	409	161
754	Peach-LT	3	1	3	1	3	1
762	Pearl Gray-VY LT	1066	420	1025	404	987	389
775	Baby Blue-VY LT	21	8	20	8	19	7
793	Cornflower Blue-MD	1	1	1	1	1	1
801	Coffee Brown-DK	42	16	40	15	39	15
819	Baby Pink-LT	2124	836	2042	804	1967	774
822	Beige Gray-LT	498	196	478	188	461	181
829	Golden Olive-VY DK	5	1	5	1	5	1
830	Golden Olive-DK	9	3	8	3	8	3
838	Beige Brown-VY DK	224	88	215	84	207	81
839	Beige Brown-DK	458	180	440	173	424	167
840	Beige Brown-MD	32	12	30	12	29	11
841	Beige Brown-LT	72	28	69	27	67	26
842	Beige Brown-VY LT	123	48	118	46	114	45

844	Beaver Brown-UL DK	662	261	637	251	613	241
898	Coffee Brown-VY DK	63	24	61	24	59	23
926	Gray Green-MD	184	72	177	69	171	67
927	Gray Green-LT	962	378	925	363	891	350
928	Gray Green-VY LT	596	234	573	225	552	217
930	Antique Blue-DK	3	1	3	1	3	1
931	Antique Blue-MD	30	12	29	11	28	11
932	Antique Blue-LT	22	9	21	8	21	8
934	Black Avocado Green	35	13	33	12	32	12
935	Avocado Green-DK	63	24	61	24	59	23
936	Avocado Green-VY DK	17	6	16	6	15	6
938	Coffee Brown-UL DK	49	19	47	18	45	17
948	Peach-VY LT	207	81	199	78	192	75
951	Tawny-LT	109	42	105	41	101	39
975	Golden Brown-DK	20	8	19	8	19	7
3011	Khaki Green-DK	6	2	6	2	5	2
3012	Khaki Green-MD	7	2	7	2	7	2
3021	Brown Gray-VY DK	772	304	742	292	715	281
3022	Brown Gray-MD	425	167	408	161	393	155
3023	Brown Gray-LT	862	339	829	326	798	314
3024	Brown Gray-VY LT	1827	719	1756	691	1691	665
3031	Mocha Brown-VY DK	141	55	136	53	131	51
3032	Mocha Brown-MD	241	94	232	91	223	87
3033	Mocha Brown-VY LT	294	115	282	111	272	107
3051	Green Gray-DK	121	48	116	46	112	44
3052	Green Gray-MD	50	19	48	19	46	18
3072	Beaver Gray-VY LT	2096	825	2015	793	1941	764
3362	Pine Green-DK	27	10	26	10	25	9
3743	Antique Violet-VY LT	103	40	99	39	95	37
3752	Antique Blue-VY LT	36	14	35	13	33	13
3753	Antique Blue-UL VY LT	44	17	42	17	41	16
3756	Baby Blue-UL VY LT	432	170	415	163	400	157
3768	Gray Green-DK	11	4	10	3	10	3
3770	Tawny-VY LT	17	6	16	6	15	6
3772	Desert Sand-VY DK	38	14	37	14	35	13
3774	Desert Sand-VY LT	216	85	208	82	200	79
3781	Mocha Brown-DK	51	19	49	19	47	18
3782	Mocha Brown-LT	107	42	103	40	99	39
3787	Brown Gray-DK	633	249	609	240	586	231
3790	Beige Gray-UL DK	289	114	278	109	268	105
3799	Pewter Gray-VY DK	366	144	352	138	339	133
3808	Turquoise-UL VY DK	1	1	1	1	1	1
3809	Turquoise-VY DK	19	7	18	7	17	7
3810	Turquoise-DK	3	1	3	1	3	1
3813	Blue Green-LT	100	39	96	37	93	36
3817	Celadon Green-LT	426	167	409	161	394	155
3823	Yellow-UL Pale	61	24	59	23	57	22
3828	Hazelnut Brown	7	2	7	2	7	2
3848	Teal Green-MD	3	1	3	1	3	1
3849	Teal Green-LT	14	5	14	5	13	5
3860	Cocoa	200	78	192	75	185	73
3861	Cocoa-LT	688	271	662	260	637	251
3862	Mocha Beige-DK	47	18	45	17	43	17
3863	Mocha Beige-MD	116	45	111	44	107	42
3864	Mocha Beige-LT	477	188	459	181	442	174
3865	Winter White	8878	3495	8537	3360	8221	3236
3866	Mocha Brown-UL VY LT	2123	836	2042	804	1966	774
Ecru	Ecru	70	27	67	26	65	25

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		28		30		32	
1	White 1	346	136	323	127	303	119
221	Shell Pink-VY DK	1	1	1	1	1	1
223	Shell Pink-LT	18	7	17	7	16	6
225	Shell Pink-UL VY LT	7	3	7	2	6	2
310	Black	146	57	136	53	128	50
317	Pewter Gray	35	14	32	13	30	12
318	Steel Gray-LT	6	2	6	2	6	2
356	Terra Cotta-MD	6	2	5	2	5	2
370	Mustard-MD	13	5	12	4	11	4
371	Mustard	36	14	34	13	32	12
372	Mustard-LT	16	6	15	5	14	5
407	Desert Sand-DK	6	2	6	2	6	2
413	Pewter Gray-DK	29	11	27	10	25	10
414	Steel Gray-DK	21	8	20	7	19	7
415	Pearl Gray	45	17	42	16	39	15
451	Shell Gray-DK	252	99	235	92	221	87
452	Shell Gray-MD	947	372	884	347	829	326
453	Shell Gray-LT	1668	656	1557	613	1460	574
503	Blue Green-MD	421	165	393	154	368	145
524	Fern Green-VY LT	653	257	610	240	572	225
535	Ash Gray-VY LT	82	32	76	30	71	28
543	Beige Brown-UL VY LT	795	313	742	292	696	274
610	Drab Brown-DK	122	48	114	44	107	42
611	Drab Brown	44	17	41	16	38	15
612	Drab Brown-LT	104	41	97	38	91	35
613	Drab Brown-VY LT	310	122	289	113	271	106
632	Desert Sand-UL VY DK	80	32	75	29	70	28
640	Beige Gray-VY DK	398	156	371	146	348	137
642	Beige Gray-DK	590	232	551	217	516	203
644	Beige Gray-MD	469	185	437	172	410	161
645	Beaver Gray-VY DK	433	170	404	158	379	149
646	Beaver Gray-DK	312	122	291	114	273	107
647	Beaver Gray-MD	527	207	492	193	461	181
648	Beaver Gray-LT	3054	1202	2850	1122	2672	1052
712	Cream	984	387	919	361	861	339
730	Olive Green-VY DK	6	2	5	2	5	2
738	Tan-VY LT	16	6	15	5	14	5
739	Tan-UL VY LT	51	20	47	19	44	17
746	Off White	394	155	368	145	345	136
754	Peach-LT	3	1	2	1	2	1
762	Pearl Gray-VY LT	952	375	889	350	833	328
775	Baby Blue-VY LT	19	7	17	7	16	6
793	Cornflower Blue-MD	1	1	1	1	1	1
801	Coffee Brown-DK	37	14	35	13	33	12
819	Baby Pink-LT	1896	746	1770	697	1659	653
822	Beige Gray-LT	444	175	415	163	389	153
829	Golden Olive-VY DK	5	1	4	1	4	1
830	Golden Olive-DK	8	3	7	2	7	2
838	Beige Brown-VY DK	200	78	187	73	175	69
839	Beige Brown-DK	409	161	382	150	358	141
840	Beige Brown-MD	28	11	26	10	25	10
841	Beige Brown-LT	64	25	60	23	56	22
842	Beige Brown-VY LT	110	43	103	40	96	38

844	Beaver Brown-UL DK	591	233	552	217	518	204
898	Coffee Brown-VY DK	57	22	53	20	50	19
926	Gray Green-MD	165	64	154	60	144	56
927	Gray Green-LT	859	338	802	315	752	295
928	Gray Green-VY LT	532	209	497	195	466	183
930	Antique Blue-DK	3	1	2	1	2	1
931	Antique Blue-MD	27	10	25	10	24	9
932	Antique Blue-LT	20	8	19	7	17	7
934	Black Avocado Green	31	12	29	11	27	10
935	Avocado Green-DK	57	22	53	20	50	19
936	Avocado Green-VY DK	15	6	14	5	13	5
938	Coffee Brown-UL DK	44	17	41	16	38	15
948	Peach-VY LT	185	73	173	68	162	64
951	Tawny-LT	98	38	91	35	86	33
975	Golden Brown-DK	18	7	17	7	16	6
3011	Khaki Green-DK	5	2	5	2	5	2
3012	Khaki Green-MD	6	2	6	2	6	2
3021	Brown Gray-VY DK	689	271	643	253	603	237
3022	Brown Gray-MD	379	149	354	139	332	131
3023	Brown Gray-LT	770	303	718	283	673	265
3024	Brown Gray-VY LT	1631	642	1522	599	1427	561
3031	Mocha Brown-VY DK	126	50	118	46	110	43
3032	Mocha Brown-MD	215	84	201	79	188	74
3033	Mocha Brown-VY LT	262	103	245	96	230	90
3051	Green Gray-DK	108	42	101	40	95	37
3052	Green Gray-MD	44	17	41	16	39	15
3072	Beaver Gray-VY LT	1871	737	1747	688	1637	645
3362	Pine Green-DK	24	9	23	8	21	8
3743	Antique Violet-VY LT	92	36	86	34	80	32
3752	Antique Blue-VY LT	32	12	30	11	28	11
3753	Antique Blue-UL VY LT	39	15	37	14	34	14
3756	Baby Blue-UL VY LT	386	152	360	142	338	133
3768	Gray Green-DK	10	3	9	3	8	3
3770	Tawny-VY LT	15	6	14	5	13	5
3772	Desert Sand-VY DK	34	13	32	12	30	11
3774	Desert Sand-VY LT	193	76	180	71	169	66
3781	Mocha Brown-DK	46	17	43	16	40	15
3782	Mocha Brown-LT	96	37	89	35	84	33
3787	Brown Gray-DK	565	222	527	208	494	195
3790	Beige Gray-UL DK	258	102	241	95	226	89
3799	Pewter Gray-VY DK	327	129	305	120	286	113
3808	Turquoise-UL VY DK	1	1	1	1	1	1
3809	Turquoise-VY DK	17	6	16	6	15	6
3810	Turquoise-DK	3	1	2	1	2	1
3813	Blue Green-LT	89	35	83	32	78	30
3817	Celadon Green-LT	380	149	355	139	332	131
3823	Yellow-UL Pale	55	21	51	20	48	19
3828	Hazelnut Brown	6	2	6	2	6	2
3848	Teal Green-MD	3	1	2	1	2	1
3849	Teal Green-LT	13	5	12	4	11	4
3860	Cocoa	179	70	167	65	156	61
3861	Cocoa-LT	615	242	574	226	538	212
3862	Mocha Beige-DK	42	16	39	15	37	14
3863	Mocha Beige-MD	104	41	97	38	91	35
3864	Mocha Beige-LT	426	168	398	157	373	147
3865	Winter White	7927	3120	7399	2912	6936	2730
3866	Mocha Brown-UL VY LT	1896	746	1769	697	1659	653
Ecru	Ecru	62	24	58	23	55	21

(16)

[illegible]

(18)

[illegible]

[illegible]

(21)

[illegible]

$$(22) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (23)$$

$$(23) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (24)$$

$$(24) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (25)$$

	480	490	500	510	520	530
10	4	4	4	4	4	4
20	4	4	4	4	4	4
30	4	4	4	4	4	4
40	4	4	4	4	4	4
50	4	4	4	4	4	4
60	4	4	4	4	4	4
70	4	4	4	4	4	4
80	4	4	4	4	4	4
90	4	4	4	4	4	4
100	4	4	4	4	4	4
110	4	4	4	4	4	4
120	4	4	4	4	4	4
130	4	4	4	4	4	4
140	4	4	4	4	4	4
150	4	4	4	4	4	4
160	4	4	4	4	4	4
170	4	4	4	4	4	4
180	4	4	4	4	4	4
190	4	4	4	4	4	4
200	4	4	4	4	4	4
210	4	4	4	4	4	4
220	4	4	4	4	4	4
230	4	4	4	4	4	4
240	4	4	4	4	4	4
250	4	4	4	4	4	4
260	4	4	4	4	4	4
270	4	4	4	4	4	4
280	4	4	4	4	4	4
290	4	4	4	4	4	4
300	4	4	4	4	4	4
310	4	4	4	4	4	4
320	4	4	4	4	4	4
330	4	4	4	4	4	4
340	4	4	4	4	4	4
350	4	4	4	4	4	4
360	4	4	4	4	4	4
370	4	4	4	4	4	4
380	4	4	4	4	4	4
390	4	4	4	4	4	4
400	4	4	4	4	4	4
410	4	4	4	4	4	4
420	4	4	4	4	4	4
430	4	4	4	4	4	4
440	4	4	4	4	4	4
450	4	4	4	4	4	4
460	4	4	4	4	4	4
470	4	4	4	4	4	4
480	4	4	4	4	4	4
490	4	4	4	4	4	4
500	4	4	4	4	4	4
510	4	4	4	4	4	4
520	4	4	4	4	4	4
530	4	4	4	4	4	4

$$(26) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (27)$$

$$(27) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (28)$$

630											
10	↑	*	⊗	↖	⊞	⊞	4	β			
	↑	▲	*	↖	⊞	○	β	↗			
	↖	⊗	⊗	⊕	+	○	↗	↗			
	⊗	⊗	*	⊕	↑	○	β	<			
	5	⊕	*	⊕	⋯	β	β	β			
	⋯	⊕	⊕	⊗	✓	β	β	↗			
	↑	⊗	⊗	*	⋯	↗	○	○			
	↖	↖	▲	⊗	⊗	⊕	β	↗			
	↖	⊗	⊗	⊗	↑	↗	↖	β			
	↖	⊗	⊗	⊗	⊗	⊗	↖	^	○		
20	β	+	⊗	⊗	+	⋯	↗	β			
	↗	○	⊗	*	⋯	☆	<	<			
	⊕	↗	⊗	*	⊗	⊗	β	○			
	+	↗	⊗	⊗	⊗	⊕	β	⊗			
	↖	⊗	⊗	⊗	⊗	⊗	↗	<			
	5	⋯	*	⊗	⊗	⊗	↖	5			
	↖	β	⊗	⊗	⊗	⊗	+	^			
	β	9	⊗	⊗	⊕	+	5	β			
	↖	⊗	⊗	⊗	⊗	⊗	☆	○			
	↖	⊗	⊗	⊗	⊗	⊗	⊗	⊗			
30	β	5	+	⊗	*	✓	⋯	↖			
	↗	☆	✓	⊗	⊗	⊗	+	⊗			
	9	+	⋯	⊗	⊗	⊗	✓	β			
	↖	↖	+	⊗	⊗	⊕	↖	↗			
	↖	⊕	○	⊗	⊗	⊗	5				
	↖	+	β	⋯	⊗	⊗	✓				
	+	+	↖	⊗	⊗	⊗	⊕	✓			
	↖	β	○	⋯	*	⊗	⊗	↖			
	↖	⊗	↖	⊗	*	⊗	↖	⊗			
	↖	?	⊗	⊗	⊗	⊕	⊗	↖			
40	⊗	↖	↖	↖	⊗	⊗	⊗	↖			
	β	↖	⊗	⊗	⊗	⊗	+	↖			
	↖	β	⊗	*	⊗	⊗	⊗	↖			
	↖	↖	⊗	⊗	*	⊕	⊗	+			
	?	⊗	⊗	⊗	*	⊕	⊗	⊗			
	⊗	○	⊗	⊗	⊗	⊕	⊗	✓			
	⊗	1	○	⊗	⊗	⊗	⊗	+			
	<	⊗	⊗	⊗	*	⊗	⊗	⊗			
	4	↗	⊗	*	⊗	⊗	⊗	⊗			
	↖	+	⊗	⊗	⊗	⊗	⊗	⊗			
50	<	↖	*	⊗	⊗	⊗	⊗	↖			
	⊗	↖	⊗	⊗	⊗	⊗	⊗	↖			
	<	+	*	⊗	⊗	⊗	⊗	9			
	⊗	⋯	⊗	*	⊗	⊗	⊗	9			
	↖	⊕	⊗	⊗	↖	⊗	⋯	9			
	↖	⊗	⊗	⊗	⊗	⊗	9	↖			
	5	↖	⊗	⊗	⊗	⊗	⊗	☆			
	+	⊗	⊗	⊗	⊗	⊗	5	↖			
	⊗	⊕	⊗	⊗	⊗	⊗	✓	✓			
	↖	⊕	↖	⊗	⊗	⊗	5	✓			
60	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
70	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			
	⊗	⊗	⊗	⊗	⊗	⊗	⊗	9			

$$(29) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (30)$$

$$(30) \quad \mathcal{L}(\mathcal{A}) \subseteq \mathcal{L}(\mathcal{B}) \iff \mathcal{A} \subseteq \mathcal{B} \quad (31)$$

$$(31) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (32)$$

$$(32) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} \left(\sum_{k=0}^\infty \frac{(t-s)^k}{k!} f^{(k)}(s) \right) ds$$

$$(33) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (34)$$

[illegible]

$$(36) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (37)$$

(38)

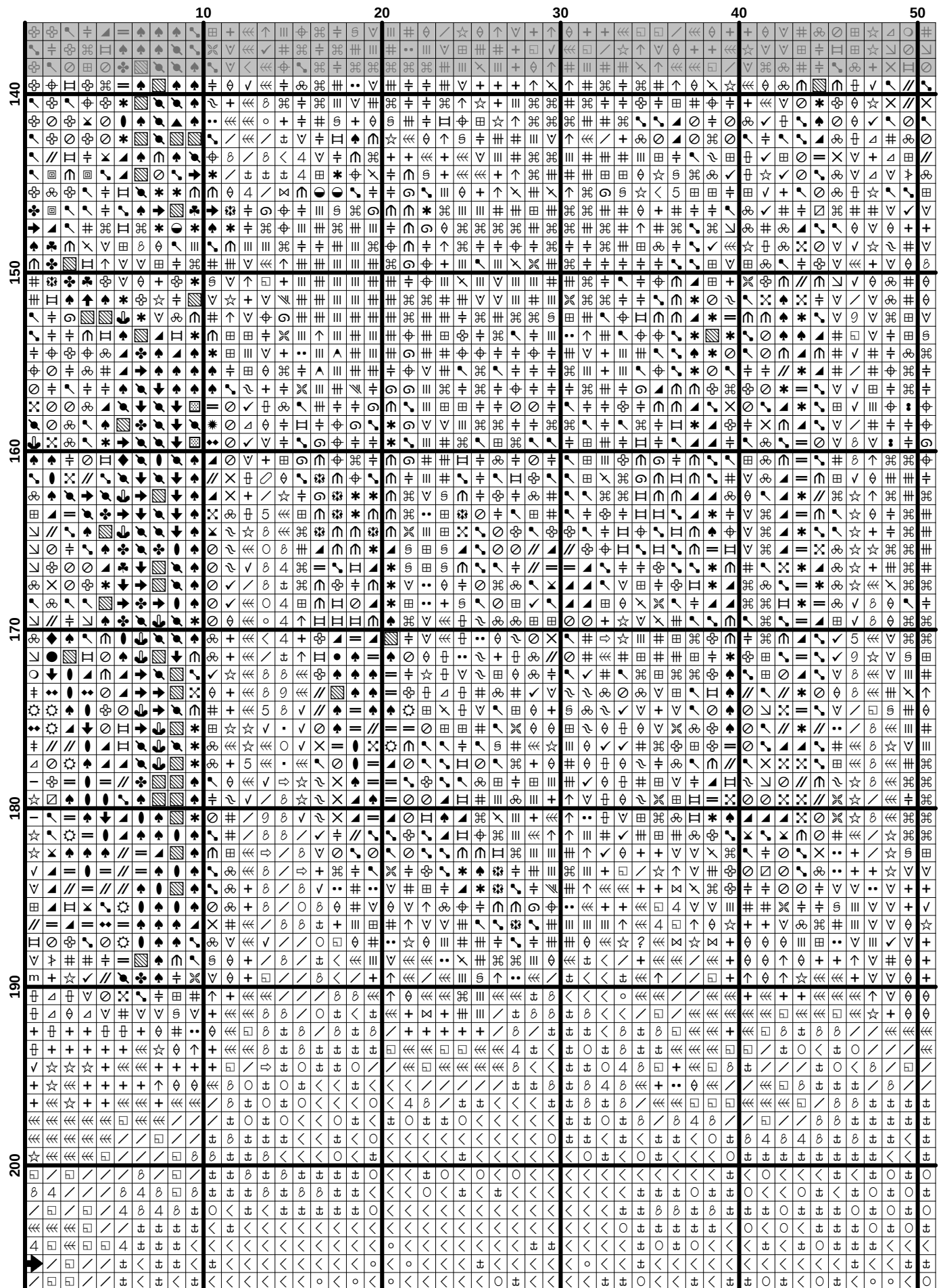
$$(38) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (39)$$

[illegible]

	530	540	550	560	570
70	+	+	+	+	+
80	+	+	+	+	+
90	+	+	+	+	+
100	+	+	+	+	+
110	+	+	+	+	+
120	+	+	+	+	+
130	+	+	+	+	+

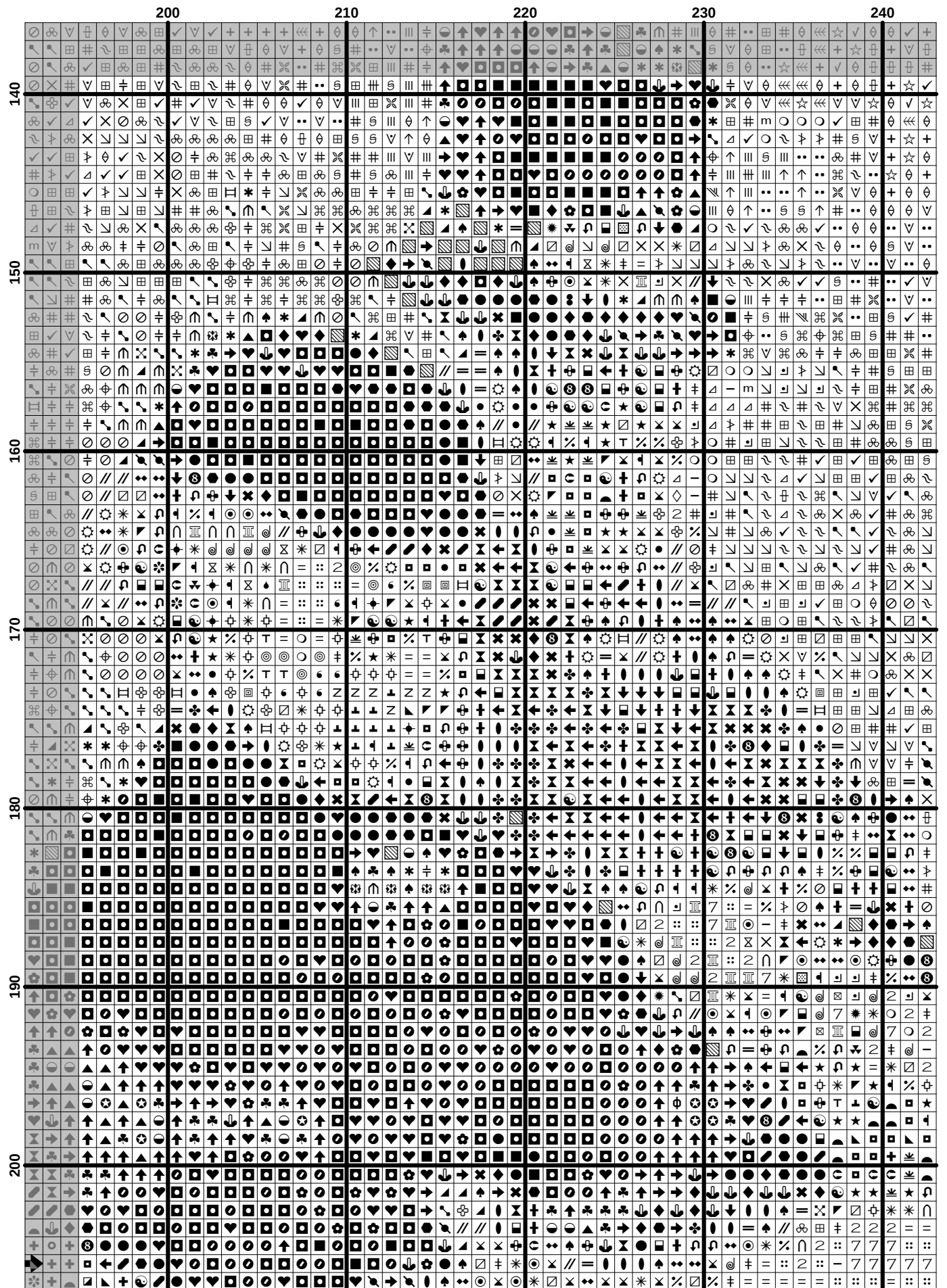
$$(41) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds + \frac{1}{\Gamma(\alpha)} \int_t^\infty (t-s)^{\alpha-1} f(s) ds$$

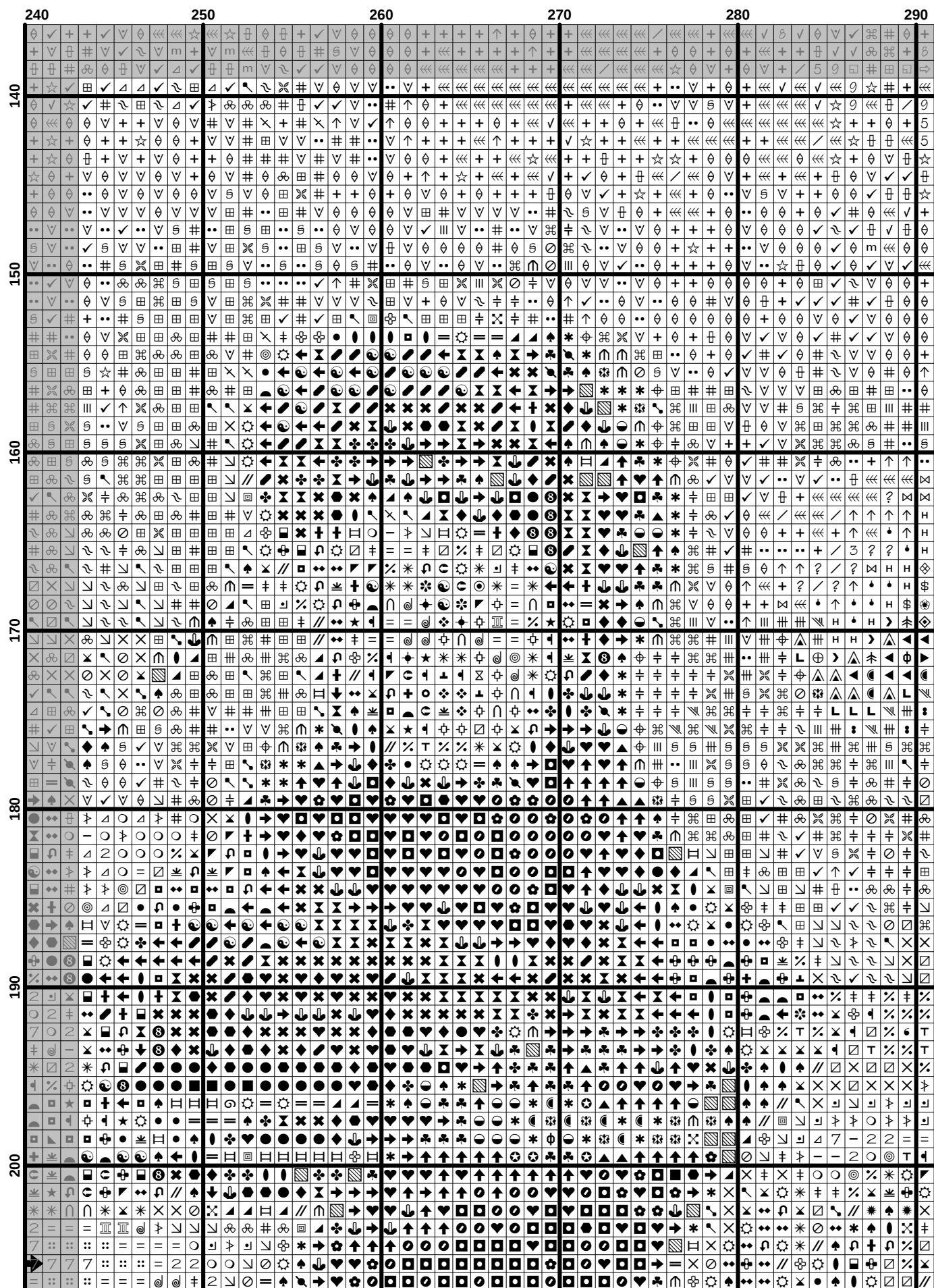
		630									
70		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
80		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
90		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
100		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
110		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
120		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
130		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
		⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕

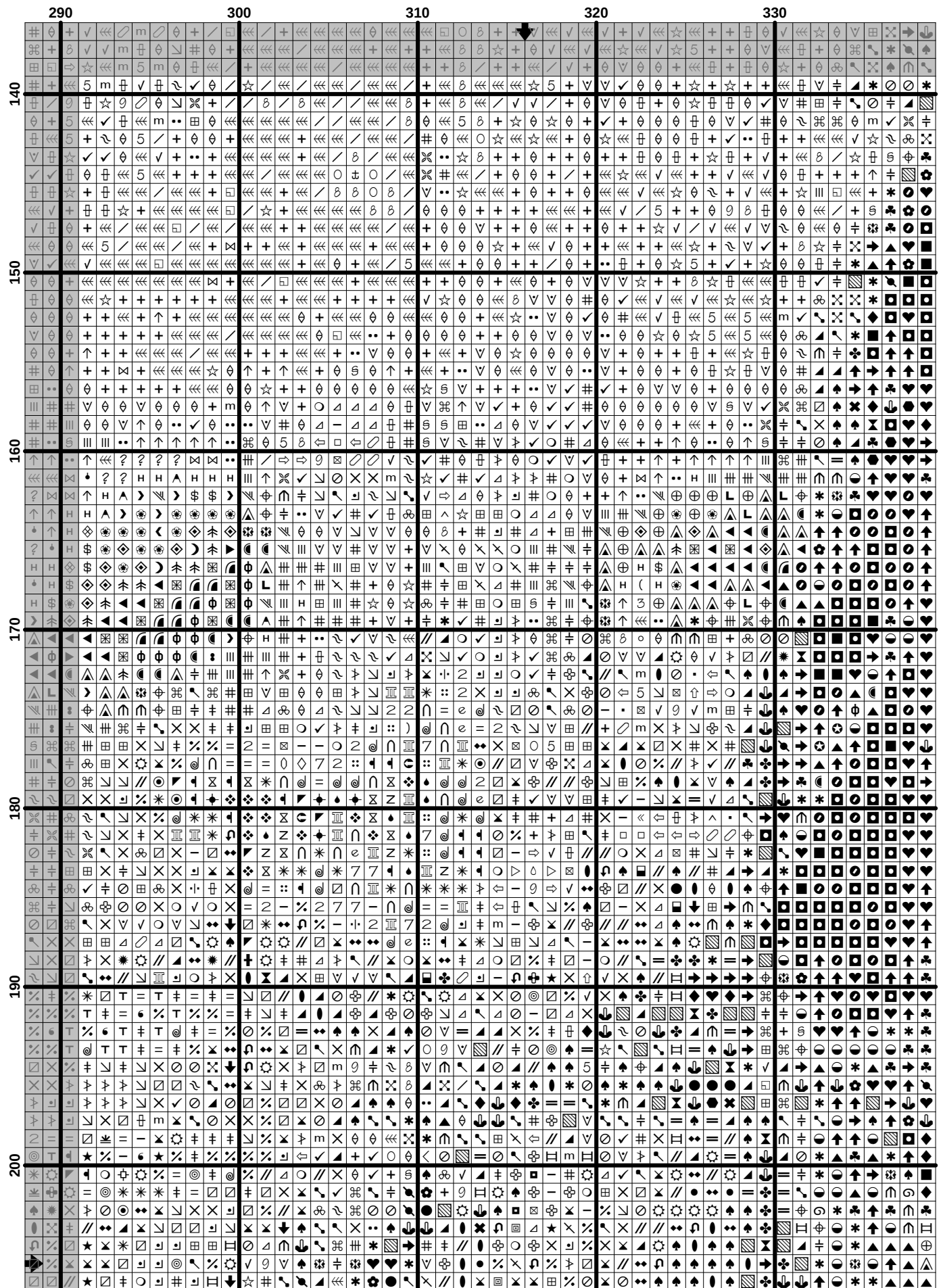


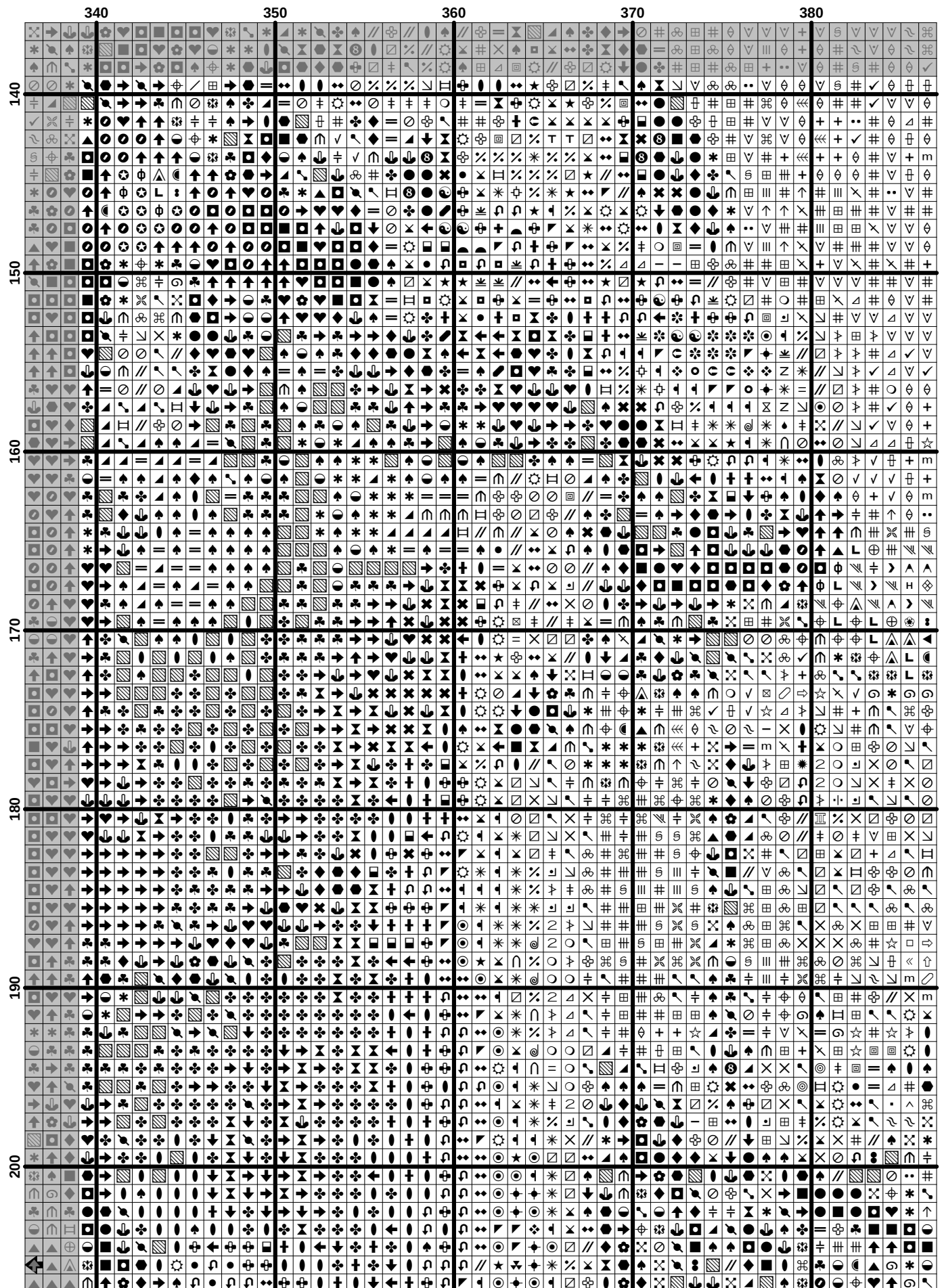
	50	60	70	80	90
140	△○#	△○#	△○#	△○#	△○#
150	△○#	△○#	△○#	△○#	△○#
160	△○#	△○#	△○#	△○#	△○#
170	△○#	△○#	△○#	△○#	△○#
180	△○#	△○#	△○#	△○#	△○#
190	△○#	△○#	△○#	△○#	△○#
200	△○#	△○#	△○#	△○#	△○#

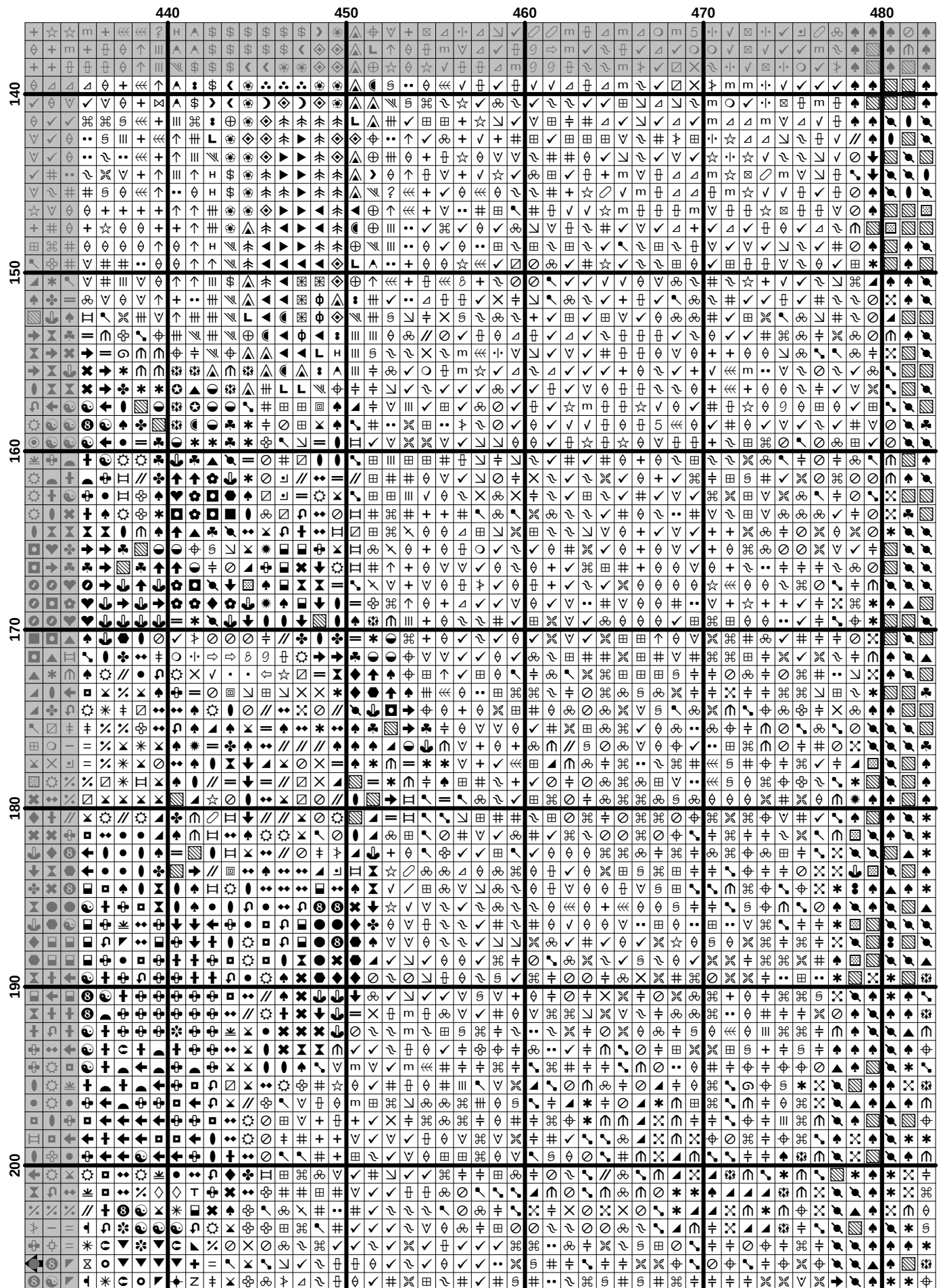
$$(46) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} \left(\sum_{k=0}^\infty \frac{(t-s)^k}{k!} f^{(k)}(s) \right) ds$$





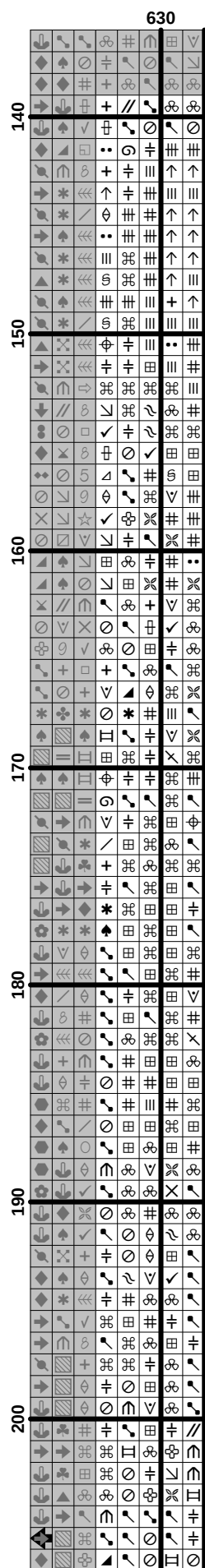


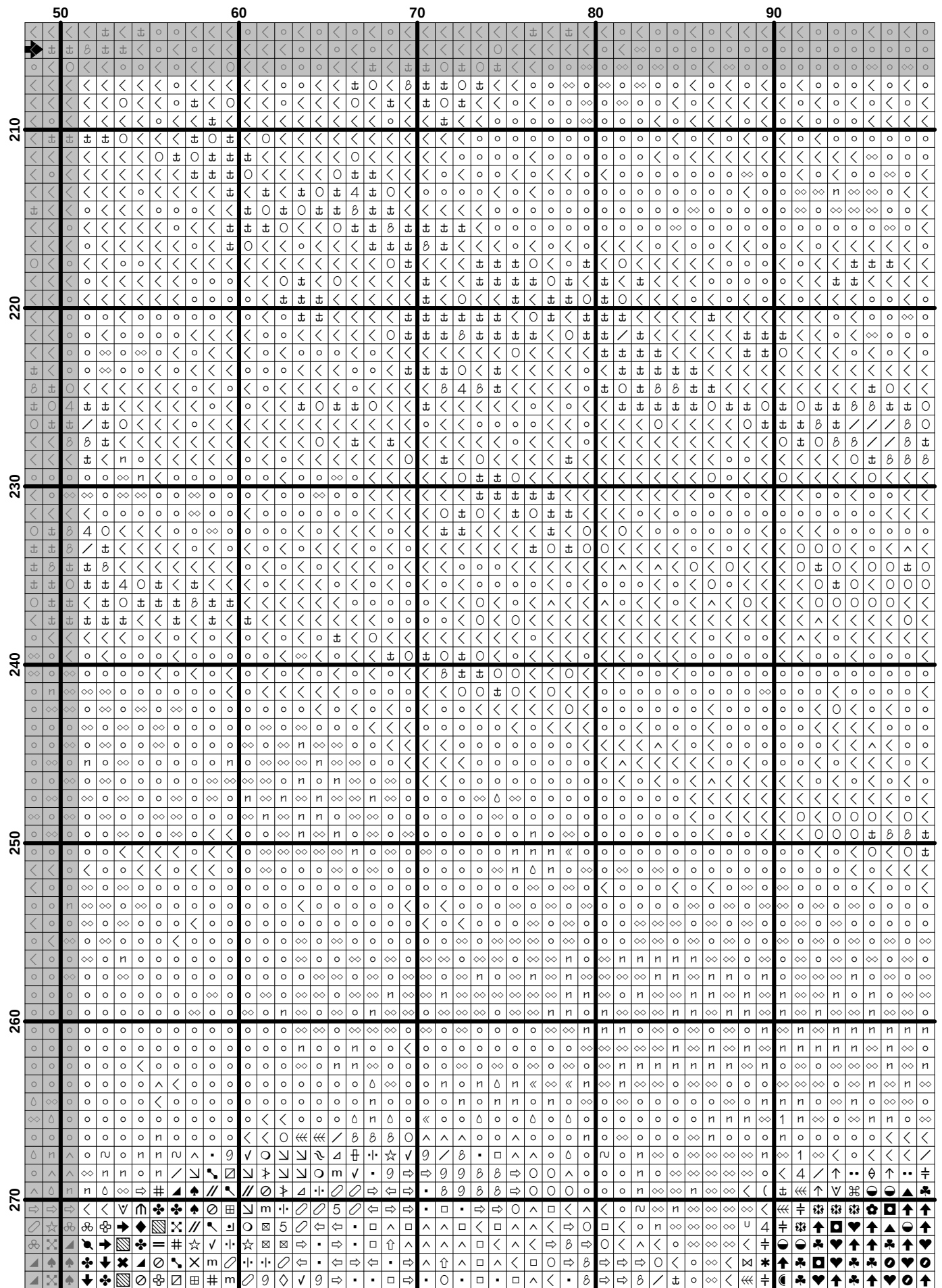




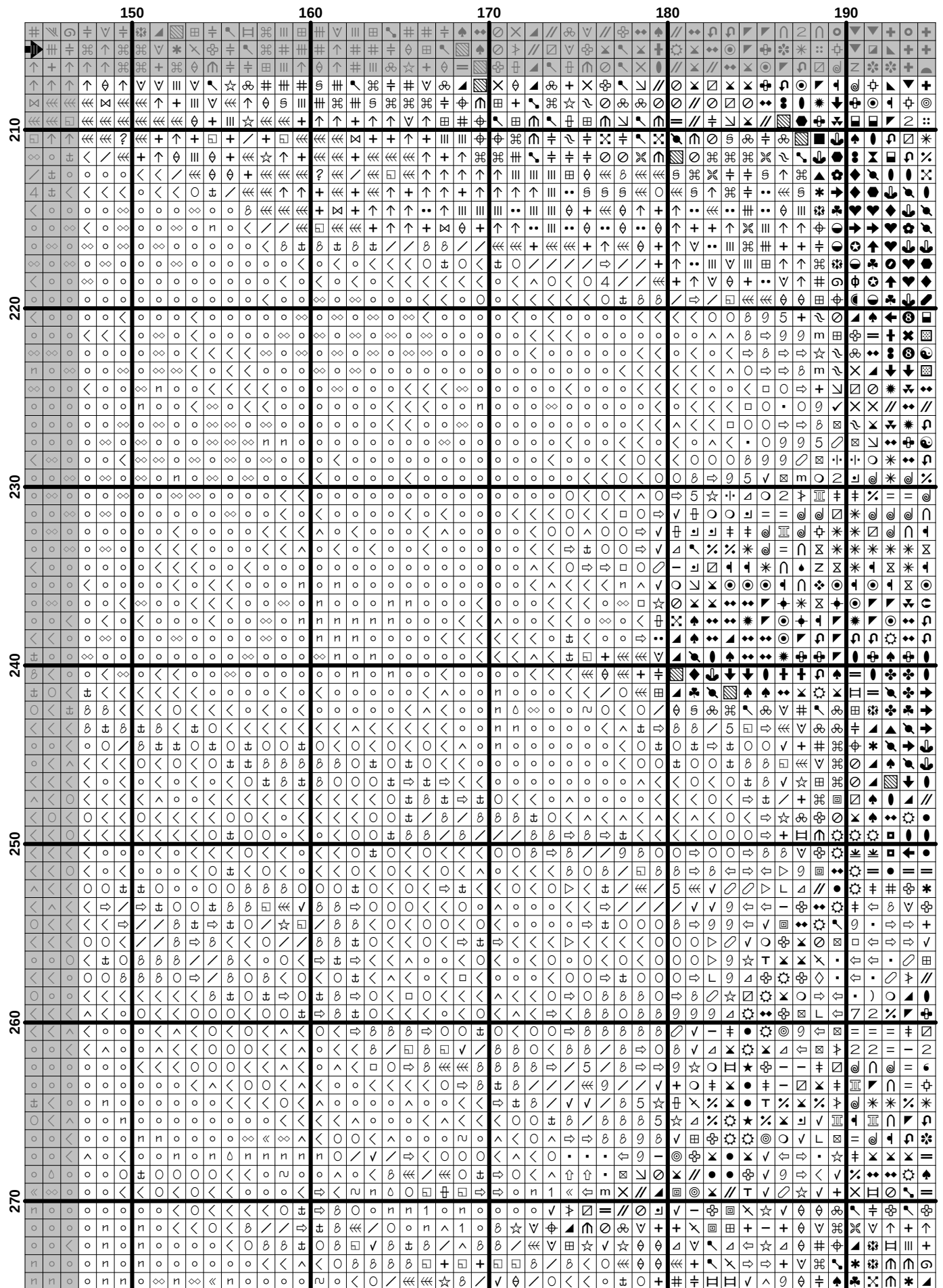
	480	490	500	510	520	530
140						
150						
160						
170						
180						
190						
200						

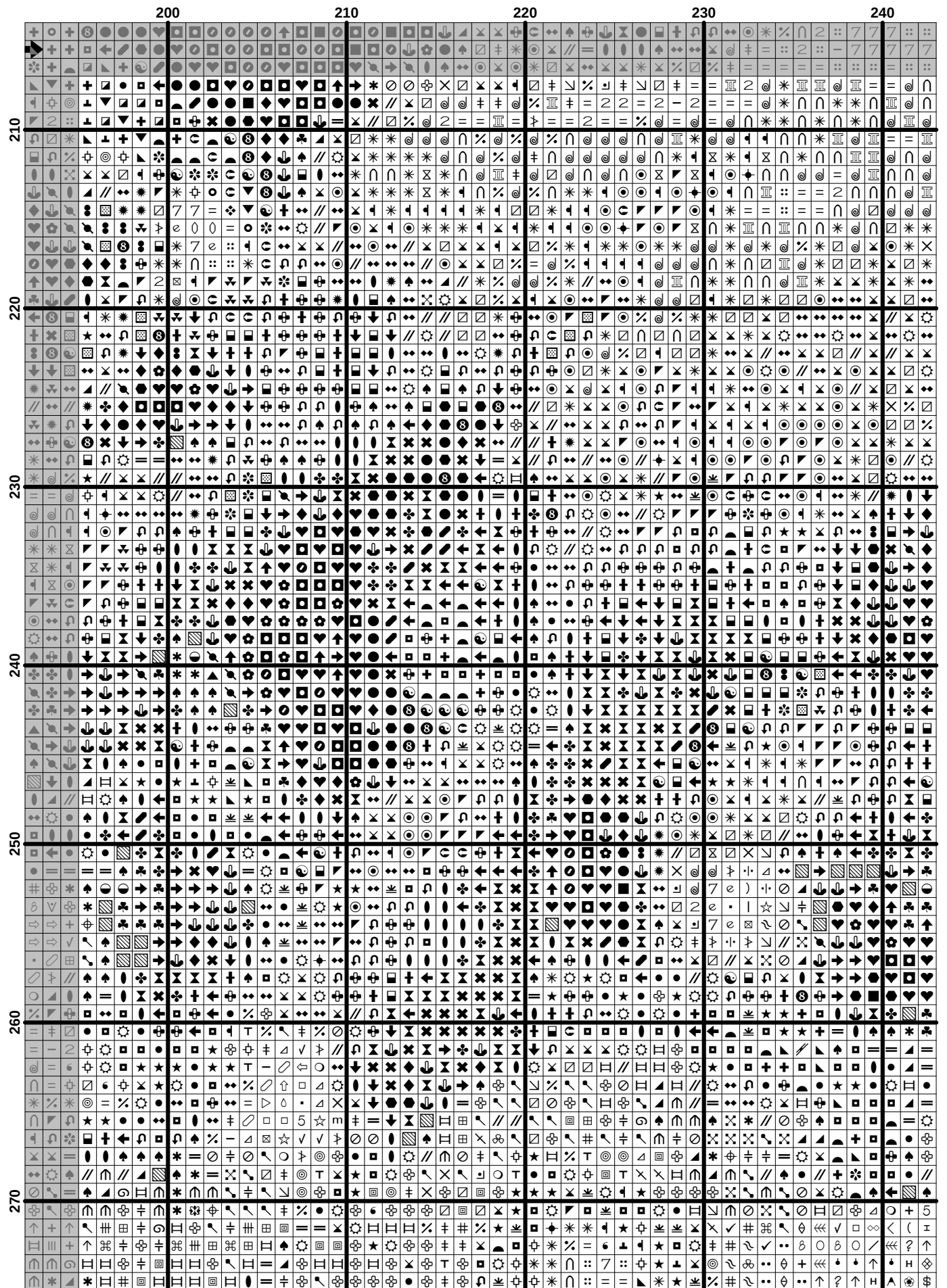
[illegible]

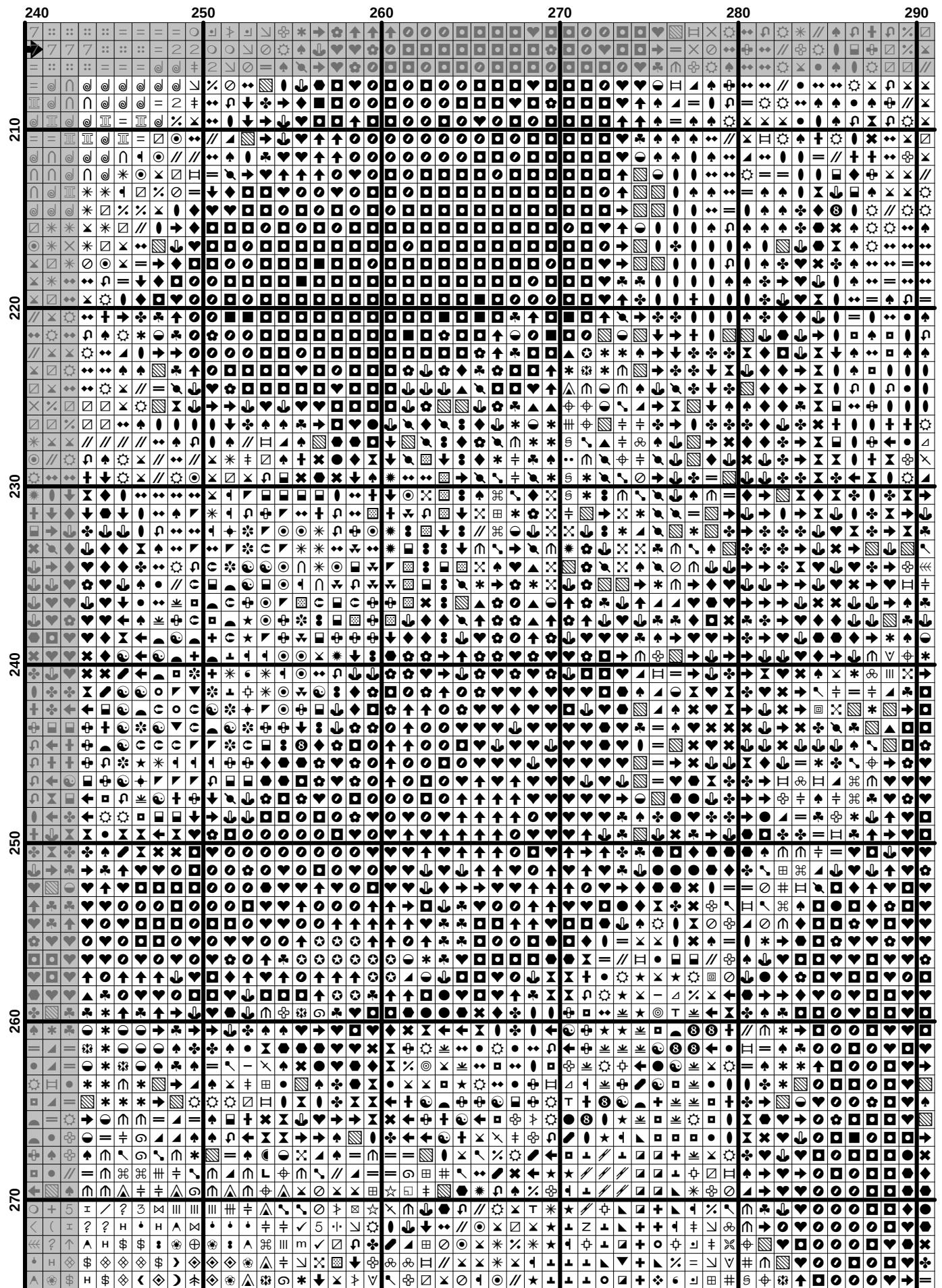


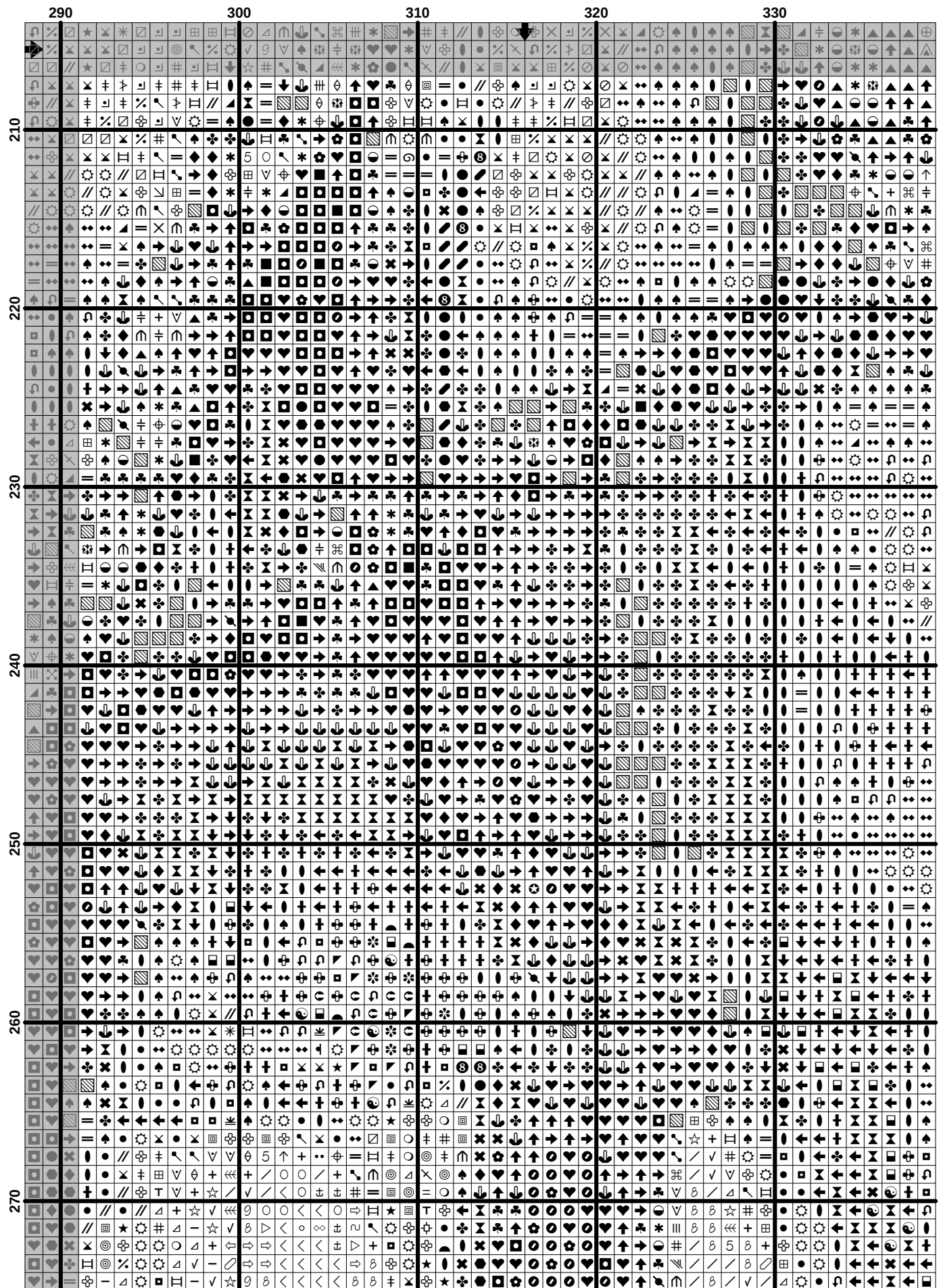


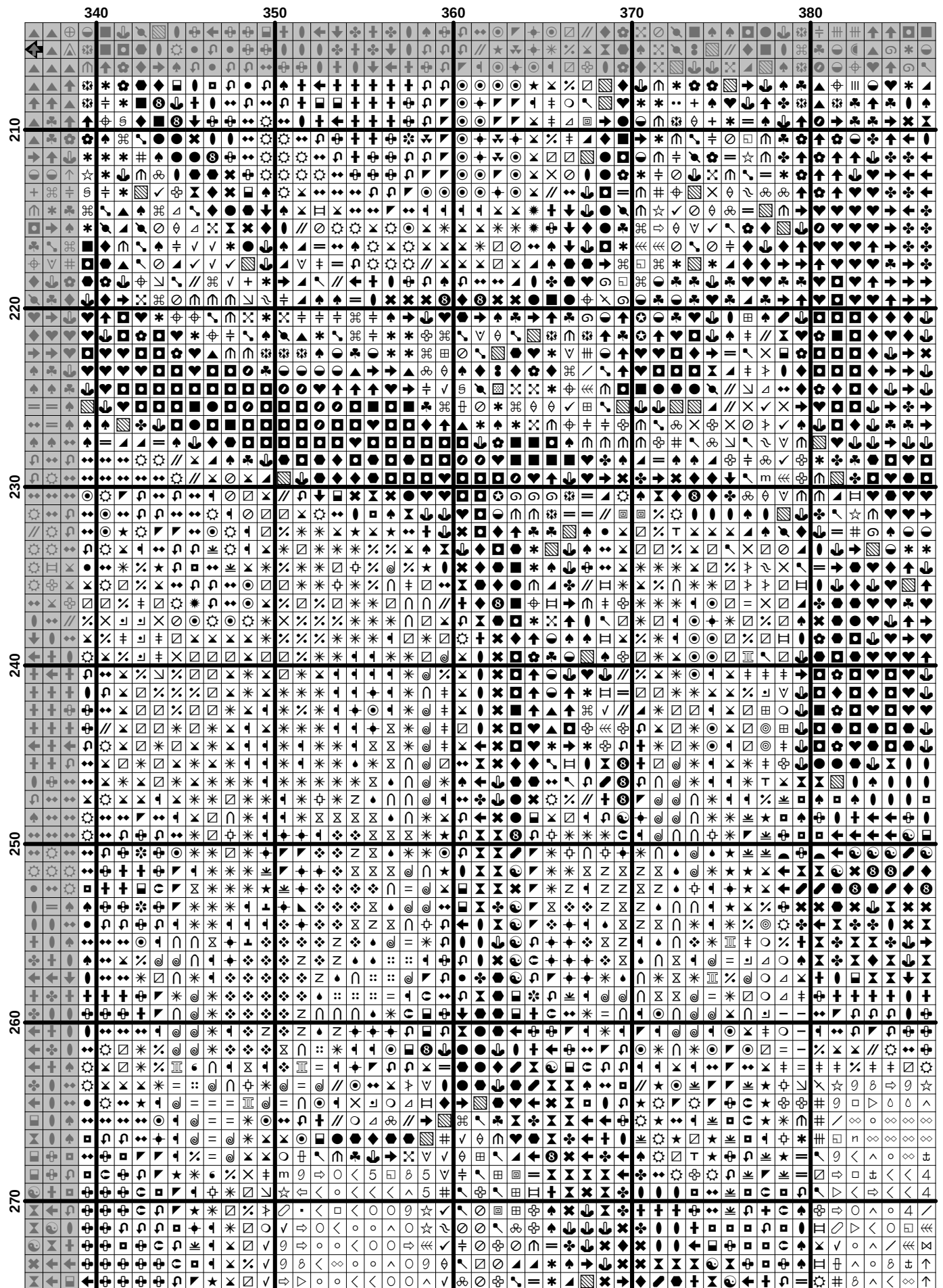
[illegible]

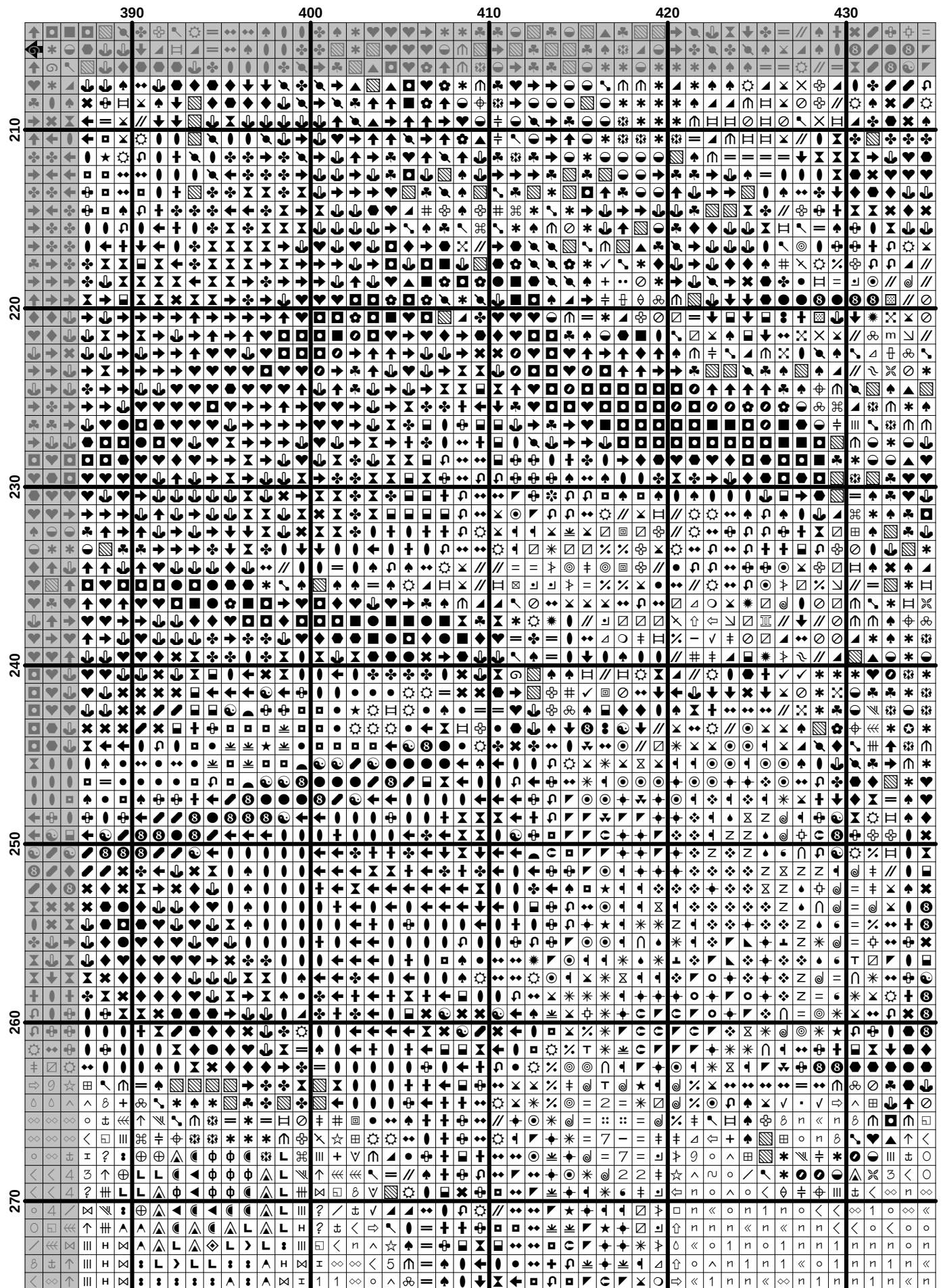












	530	540	550	560	570
210					
220					
230					
240					
250					
260					
270					

(70)

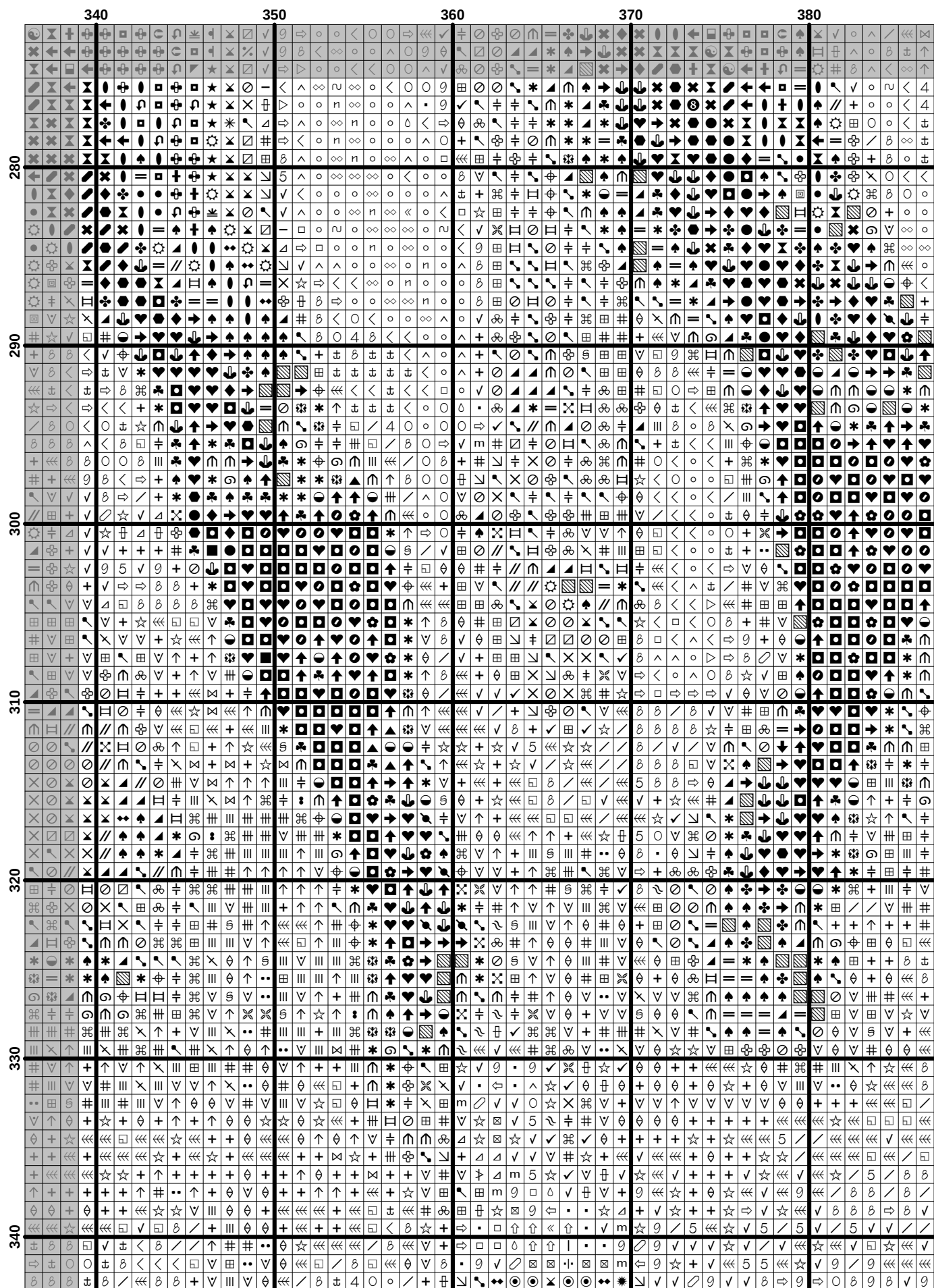
$$(71) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \mathcal{I}_\alpha^\beta f(t), \quad t \in [0, T],$$

[illegible]

[illegible]

$$(75) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} \left(\sum_{k=0}^\infty \frac{(t-s)^k}{k!} f^{(k)}(s) \right) ds$$

[illegible]



$$(80) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (81)$$

[illegible]

$$(83) \quad \mathcal{L}(\mathcal{A}) \subseteq \mathcal{L}(\mathcal{B}) \iff \mathcal{A} \subseteq \mathcal{B} \text{ and } \mathcal{A} \text{ is closed under } \mathcal{L}(\mathcal{A}) \text{ (84)}$$

630									
	∞	∞	∞	1	n	1	∞	∞	∞
	∞	∞	n	∞	n	1	∞	(	
	∞	∞	∞	∞	(	∞	∞	∞	<
	∞	∞	n	∞	∞	n	(	o	
	o	(	o	∞	∞	∞	n	(	
	∞	∞	o	o	∞	∞	∞	o	
	o	<	<	(	o	o	∞	β	
280	<	<	∞	<	∞	∞	o	<	
	∞	<	<	<	∞	∞	∞	∞	
	n	<	<	<	<	∞	∞	<	
	1	n	∞	∞	o	<	<	∞	
	1	1	n	n	∞	n	o	<	
	1	1	1	1	n	∞	∞	∞	
	1	1	u	1	1	∞	∞	∞	
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	u	1	u	1	u	u	1	1	
	1	1	1	1	u	1	u	1	
290	1	1	1	1	1	1	1	1	
	u	1	u	1	1	1	u	u	
	1	1	u	1	1	1	1	u	
	u	u	1	u	1	1	1	n	
	1	1	u	1	u	1	n	1	
	1	u	1	u	1	1	1	n	
	1	1	1	1	1	1	n	n	
	1	1	1	1	1	1	n	n	
	1	1	1	1	1	1	1	1	
	u	1	1	1	u	1	1	1	
300	1	1	u	1	1	1	1	u	
	1	u	1	1	1	1	1	1	
	u	1	1	1	1	1	1	1	
	1	u	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	u	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	u	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
310	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	n	n	1	1	1	1	1	1	
	n	1	n	1	1	1	1	1	
	1	n	1	1	1	1	n	1	
	1	1	1	1	1	1	1	n	
	1	1	1	1	1	1	1	1	
320	1	n	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	1	1	1	1	1	1	1	
	1	1	1	1	1	n	1	n	
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	u	1	1	1	1	1	1	1	
	1	u	1	1	1	1	1	1	
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	1	1	1	1	1	1	1	1	
330	1	1	1	1	1	1	1	1	
	n	1	n	1	1	1	1	n	
	n	n	1	n	1	1	n	n	
	n	1	n	1	n	1	n	1	
	1	n	1	n	1	n	n	n	
	n	1	1	n	1	n	n	n	
	1	1	n	1	n	n	n	n	
	1	1	1	1	n	1	n	n	
	1	1	1	1	1	1	n	n	
	1	1	1	1	1	1	n	n	
340	1	1	1	1	1	n	n	n	
	1	1	1	n	1	1	n	n	
	1	n	1	1	n	1	n	«	

[illegible]

[illegible]

	100										110										120										130										140																																																																																																																																																																																																																																																																																																																																																																																																																						
340	𐤁	𐤂	𐤃	𐤄	𐤅	𐤆	𐤇	𐤈	𐤉	𐤊	𐤋	𐤌	𐤍	𐤎	𐤏	𐤐	𐤑	𐤒	𐤓	𐤔	𐤕	𐤖	𐤗	𐤘	𐤙	𐤚	𐤛	𐤜	𐤝	𐤞	𐤟	𐤠	𐤡	𐤢	𐤣	𐤤	𐤥	𐤦	𐤧	𐤨	𐤩	𐤪	𐤫	𐤬	𐤭	𐤮	𐤯	𐤰	𐤱	𐤲	𐤳	𐤴	𐤵	𐤶	𐤷	𐤸	𐤹	𐤺	𐤻	𐤼	𐤽	𐤾	𐤿	𐥀	𐥁	𐥂	𐥃	𐥄	𐥅	𐥆	𐥇	𐥈	𐥉	𐥊	𐥋	𐥌	𐥍	𐥎	𐥏	𐥐	𐥑	𐥒	𐥓	𐥔	𐥕	𐥖	𐥗	𐥘	𐥙	𐥚	𐥛	𐥜	𐥝	𐥞	𐥟	𐥠	𐥡	𐥢	𐥣	𐥤	𐥥	𐥦	𐥧	𐥨	𐥩	𐥪	𐥫	𐥬	𐥭	𐥮	𐥯	𐥰	𐥱	𐥲	𐥳	𐥴	𐥵	𐥶	𐥷	𐥸	𐥹	𐥺	𐥻	𐥼	𐥽	𐥾	𐥿	𐦀	𐦁	𐦂	𐦃	𐦄	𐦅	𐦆	𐦇	𐦈	𐦉	𐦊	𐦋	𐦌	𐦍	𐦎	𐦏	𐦐	𐦑	𐦒	𐦓	𐦔	𐦕	𐦖	𐦗	𐦘	𐦙	𐦚	𐦛	𐦜	𐦝	𐦞	𐦟	𐦠	𐦡	𐦢	𐦣	𐦤	𐦥	𐦦	𐦧	𐦨	𐦩	𐦪	𐦫	𐦬	𐦭	𐦮	𐦯	𐦰	𐦱	𐦲	𐦳	𐦴	𐦵	𐦶	𐦷	𐦸	𐦹	𐦺	𐦻	𐦼	𐦽	𐦾	𐦿	𐧀	𐧁	𐧂	𐧃	𐧄	𐧅	𐧆	𐧇	𐧈	𐧉	𐧊	𐧋	𐧌	𐧍	𐧎	𐧏	𐧐	𐧑	𐧒	𐧓	𐧔	𐧕	𐧖	𐧗	𐧘	𐧙	𐧚	𐧛	𐧜	𐧝	𐧞	𐧟	𐧠	𐧡	𐧢	𐧣	𐧤	𐧥	𐧦	𐧧	𐧨	𐧩	𐧪	𐧫	𐧬	𐧭	𐧮	𐧯	𐧰	𐧱	𐧲	𐧳	𐧴	𐧵	𐧶	𐧷	𐧸	𐧹	𐧺	𐧻	𐧼	𐧽	𐧾	𐧿	𐨀	𐨁	𐨂	𐨃	𐨄	𐨅	𐨆	𐨇	𐨈	𐨉	𐨊	𐨋	𐨌	𐨍	𐨎	𐨏	𐨐	𐨑	𐨒	𐨓	𐨔	𐨕	𐨖	𐨗	𐨘	𐨙	𐨚	𐨛	𐨜	𐨝	𐨞	𐨟	𐨠	𐨡	𐨢	𐨣	𐨤	𐨥	𐨦	𐨧	𐨨	𐨩	𐨪	𐨫	𐨬	𐨭	𐨮	𐨯	𐨰	𐨱	𐨲	𐨳	𐨴	𐨵	𐨶	𐨷	𐨸	𐨹	𐨺	𐨻	𐨼	𐨽	𐨾	𐨿	𐩀	𐩁	𐩂	𐩃	𐩄	𐩅	𐩆	𐩇	𐩈	𐩉	𐩊	𐩋	𐩌	𐩍	𐩎	𐩏	𐩐	𐩑	𐩒	𐩓	𐩔	𐩕	𐩖	𐩗	𐩘	𐩙	𐩚	𐩛	𐩜	𐩝	𐩞	𐩟	𐩠	𐩡	𐩢	𐩣	𐩤	𐩥	𐩦	𐩧	𐩨	𐩩	𐩪	𐩫	𐩬	𐩭	𐩮	𐩯	𐩰	𐩱	𐩲	𐩳	𐩴	𐩵	𐩶	𐩷	𐩸	𐩹	𐩺	𐩻	𐩼	𐩽	𐩾	𐩿	𐪀	𐪁	𐪂	𐪃	𐪄	𐪅	𐪆	𐪇	𐪈	𐪉	𐪊	𐪋	𐪌	𐪍	𐪎	𐪏	𐪐	𐪑	𐪒	𐪓	𐪔	𐪕	𐪖	𐪗	𐪘	𐪙	𐪚	𐪛	𐪜	𐪝	𐪞	𐪟	𐪠	𐪡	𐪢	𐪣	𐪤	𐪥	𐪦	𐪧	𐪨	𐪩	𐪪	𐪫	𐪬	𐪭	𐪮	𐪯	𐪰	𐪱	𐪲	𐪳	𐪴	𐪵	𐪶	𐪷	𐪸	𐪹	𐪺	𐪻	𐪼	𐪽	𐪾	

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	390	400	410	420	430
340	☆	☆	☆	☆	☆
350	☆	☆	☆	☆	☆
360	☆	☆	☆	☆	☆
370	☆	☆	☆	☆	☆
380	☆	☆	☆	☆	☆
390	☆	☆	☆	☆	☆
400	☆	☆	☆	☆	☆
410	☆	☆	☆	☆	☆

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[illegible]

	630							
340	1	1	1	n	1	1	n	n
	1	1	n	1	1	n	n	n
	1	n	1	1	n	1	n	<
	1	1	n	1	n	1	<	n
	1	1	1	1	1	1	n	n
	1	1	1	1	1	1	n	n
	1	1	1	1	1	n	1	n
	1	1	1	1	1	1	n	n
	1	1	1	1	1	1	n	1
350	1	1	1	1	1	1	n	1
	1	1	1	1	1	1	n	1
	1	1	1	1	1	n	1	1
	1	1	1	1	1	1	1	n
	1	1	u	1	1	1	n	1
	1	u	1	1	1	1	1	1
	u	1	1	1	1	1	1	1
	1	1	1	1	1	1	1	1
	1	u	1	1	1	1	n	n
360	u	1	1	1	1	n	n	n
	1	u	1	1	1	1	n	n
	1	1	1	1	1	1	n	1
	1	1	1	1	1	1	n	n
	1	1	1	1	1	n	n	n
	1	1	n	1	1	n	n	n
	1	1	1	1	n	1	n	n
	1	1	1	1	1	1	n	n
	1	1	n	1	n	n	n	<
370	1	1	1	1	1	n	n	n
	1	1	1	1	1	n	n	n
	1	1	1	1	1	n	n	<
	1	1	1	1	1	n	n	n
	1	1	1	1	1	n	n	n
	1	1	1	1	1	n	n	n
	1	1	n	1	n	n	n	n
	1	1	1	1	1	n	n	n
	1	1	1	n	n	n	n	<
380	1	1	1	n	n	n	n	n
	n	1	n	1	n	n	n	n
	n	1	n	n	n	n	n	n
	n	n	n	n	<	n	n	o
	n	n	n	<	n	n	n	n
	n	n	n	n	n	<	∞	δ
	n	n	<	n	n	<	∞	δ
	n	δ	∞	δ	o	n	δ	n
	o	∞	o	o	o	δ	o	o
390	<	o	o	δ	o	δ	o	δ
	n	n	∞	∞	o	o	δ	o
	∞	<	∞	<	o	<	o	o
	δ	o	∞	δ	∞	o	o	δ
	n	n	<	o	<	<	δ	^
	n	<	∞	δ	<	n	<	∞
	^	^	^	^	^	δ	δ	δ
	δ	o	δ	^	^	^	δ	^
	δ	∞	∞	^	^	δ	δ	^
400	<	δ	^	^	^	^	^	^
	^	<	^	^	^	^	^	^
	o	^	o	^	o	δ	o	o
	o	o	δ	o	o	δ	o	□
	o	^	<	^	^	o	□	□
	^	<	^	□	o	^	^	<
	o	o	^	<	□	o	^	^
	<	^	<	o	→	→	o	<
	o	o	o	→	→	δ	o	□
410	o	o	→	→	δ	δ	↑	o
	o	<	o	o	o	o	□	o
	□	<	□	o	o	o	□	o