

974 The Traveller



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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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The Traveller

Stitch Count	
Horizontal:	400
Vertical:	585

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:	73	28.44	107	41.78	64	24.89	93	36.56	57	22.125	83	32.5
Including Margins:	89	35	123	48	80	31	109	43	73	29	99	39
	10				12				24			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	102	39.81	149	58.49	85	33.18	124	48.74	42	16.59	62	24.37
Including Margins:	118	46	165	65	101	40	140	55	58	23	78	31
	25				26				27			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	40	15.92	59	23.39	39	15.31	57	22.49	37	14.74	55	21.66
Including Margins:	56	22	75	30	55	22	73	29	53	21	71	28
	28				30				32			
	Width		Height		Width		Height		Width		Height	
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch
Pattern:	36	14.22	53	20.89	34	13.27	49	19.49	31	12.44	46	18.27
Including Margins:	52	21	69	27	50	20	65	26	47	19	62	25

Solid Color Stitches. Use two strands of the specified color for these stitches.		
Symbol	DMC	Name
	301	Mahogany-MD
	310	Black
	317	Pewter Gray
	318	Steel Gray-LT
	341	Blue Violet-LT
	413	Pewter Gray-DK
	414	Steel Gray-DK
	415	Pearl Gray
	433	Brown-MD
	435	Brown-VY LT
	436	Tan
	437	Tan-LT
	451	Shell Gray-DK
	452	Shell Gray-MD
	453	Shell Gray-LT
	535	Ash Gray-VY LT
	543	Beige Brown-UL VY LT
	610	Drab Brown-DK
	612	Drab Brown-LT
	613	Drab Brown-VY LT
	632	Desert Sand-UL VY DK
	640	Beige Gray-VY DK
	642	Beige Gray-DK
	645	Beaver Gray-VY DK
	646	Beaver Gray-DK
	647	Beaver Gray-MD
	712	Cream
	738	Tan-VY LT
	739	Tan-UL VY LT
	762	Pearl Gray-VY LT
	819	Baby Pink-LT
	822	Beige Gray-LT
	838	Beige Brown-VY DK

	839	Beige Brown-DK
	840	Beige Brown-MD
	841	Beige Brown-LT
	842	Beige Brown-VY LT
	844	Beaver Brown-UL DK
	938	Coffee Brown-UL DK
	945	Tawny
	975	Golden Brown-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
	3042	Antique Violet-LT
	3072	Beaver Gray-VY LT
	3743	Antique Violet-VY LT
	3747	Blue Violet-VY LT
	3756	Baby Blue-UL VY LT
	3772	Desert Sand-VY DK
	3776	Mahogany-LT
	3781	Mocha Brown-DK
	3782	Mocha Brown-LT
	3787	Brown Gray-DK
	3790	Beige Gray-UL DK
	3799	Pewter Gray-VY DK
	3825	Pumpkin-Pale
	3828	Hazelnut Brown
	3856	Mahogany-UL VY LT
	3860	Cocoa
	3862	Mocha Beige-DK
	3863	Mocha Beige-MD
	3864	Mocha Beige-LT
	3865	Winter White
	Ecru	Ecru

Blend Stitches. Use one strand of each of DMC1 and DMC2 for these stitches.

Symbol	DMC1	Name1	DMC2	Name2
⬆	844	Beaver Brown-UL DK	3799	Pewter Gray -VY DK
▣	3781	Mocha Brown-DK	3790	Beige Gray-UL DK
⬅	535	Ash Gray-VY LT	3799	Pewter Gray -VY DK
⊙	977	Golden Brown-LT	3045	Yellow Beige-DK
⌚	920	Copper-MD	3776	Mahogany-LT
⊙	435	Brown-VY LT	436	Tan
✱	645	Beaver Gray-VY DK	3790	Beige Gray-UL DK
▼	645	Beaver Gray-VY DK	3021	Brown Gray -VY DK
▴	645	Beaver Gray-VY DK	3787	Brown Gray -DK
●	920	Copper-MD	435	Brown-VY LT
↓	3021	Brown Gray -VY DK	839	Beige Brown-DK
+	3781	Mocha Brown-DK	3787	Brown Gray -DK
◇	452	Shell Gray-MD	453	Shell Gray-LT
♡	819	Baby Pink-LT	3865	Winter White
△	3756	Baby Blue-UL VY LT	3865	Winter White
✦	780	Topaz-UL VY DK	3721	Shell Pink-DK
◀	844	Beaver Brown-UL DK	3021	Brown Gray -VY DK
●	934	Black Avocado Green	3799	Pewter Gray -VY DK
✱	934	Black Avocado Green	3021	Brown Gray -VY DK
■	934	Black Avocado Green	3371	Black Brown
●	3371	Black Brown	3799	Pewter Gray -VY DK
⑧	3371	Black Brown	3021	Brown Gray -VY DK
▨	839	Beige Brown-DK	844	Beaver Brown-UL DK
▲	839	Beige Brown-DK	3787	Brown Gray -DK
🌲	3859	Rosewood-LT	3863	Mocha Beige-MD
3	225	Shell Pink-UL VY LT	648	Beaver Gray-LT
•	3823	Yellow-UL Pale	945	Tawny
≡	830	Golden Olive-DK	3858	Rosewood-MD
7	738	Tan-VY LT	3856	Mahogany-UL VY LT
(712	Cream	762	Pearl Gray-VY LT
)	3072	Beaver Gray-VY LT	225	Shell Pink-UL VY LT
/	738	Tan-VY LT	3778	Terra Cotta-LT
✕	647	Beaver Gray-MD	451	Shell Gray-DK
∞	1	White 1	3865	Winter White
◇	451	Shell Gray-DK	414	Steel Gray-DK
н	927	Gray Green-LT	3042	Antique Violet-LT
✱	414	Steel Gray-DK	318	Steel Gray-LT
▼	414	Steel Gray-DK	931	Antique Blue-MD
🌲	414	Steel Gray-DK	415	Pearl Gray
‡	415	Pearl Gray	334	Baby Blue-MD
↑	415	Pearl Gray	318	Steel Gray-LT
✱	317	Pewter Gray	931	Antique Blue-MD
Λ	3752	Antique Blue-VY LT	318	Steel Gray-LT
\$	640	Beige Gray-VY DK	451	Shell Gray-DK
Δ	415	Pearl Gray	3743	Antique Violet-VY LT
9	3770	Tawny-VY LT	3774	Desert Sand-VY LT
5	951	Tawny-LT	754	Peach-LT
▣	413	Pewter Gray -DK	3768	Gray Green-DK
φ	317	Pewter Gray	3768	Gray Green-DK
●	839	Beige Brown-DK	645	Beaver Gray -VY DK
▣	3021	Brown Gray -VY DK	3860	Cocoa
#	640	Beige Gray-VY DK	645	Beaver Gray-VY DK
a	948	Peach-VY LT	754	Peach-LT

⇒	950	Desert Sand-LT	3864	Mocha Beige-LT
⌘	452	Shell Gray-MD	648	Beaver Gray-LT
⌘	613	Drab Brown-VY LT	950	Desert Sand-LT
⌘	613	Drab Brown-VY LT	3864	Mocha Beige-LT
▲	839	Beige Brown-DK	830	Golden Olive-DK
◆	838	Beige Brown-VY DK	3781	Mocha Brown-DK
☺	632	Desert Sand-UL VY DK	611	Drab Brown
☆	3021	Brown Gray -VY DK	3031	Mocha Brown-VY DK
☼	3023	Brown Gray -LT	3861	Cocoa-LT
➔	3051	Green Gray-DK	838	Beige Brown-VY DK
4	372	Mustard-LT	3064	Desert Sand
■	3787	Brown Gray -DK	844	Beaver Brown-UL DK
☼	413	Pewter Gray -DK	317	Pewter Gray
⊕	317	Pewter Gray	414	Steel Gray-DK
↑	3799	Pewter Gray -VY DK	413	Pewter Gray -DK
□	3859	Rosewood-LT	436	Tan
//	3856	Mahogany-UL VY LT	437	Tan-LT
⌘	632	Desert Sand-UL VY DK	435	Brown-VY LT
✚	793	Cornflower Blue-MD	414	Steel Gray-DK
☒	3778	Terra Cotta-LT	402	Mahogany-VY LT
┆	738	Tan-VY LT	950	Desert Sand-LT
•	437	Tan-LT	3778	Terra Cotta-LT
—	3747	Blue Violet-VY LT	210	Lavender-MD
⊕	435	Brown-VY LT	3776	Mahogany-LT
⌘	420	Hazelnut Brown-DK	3859	Rosewood-LT
☼	722	Orange Spice-LT	3776	Mahogany-LT
	3064	Desert Sand	611	Drab Brown
☼	611	Drab Brown	838	Beige Brown-VY DK
⊕	780	Topaz-UL VY DK	610	Drab Brown-DK
≡	610	Drab Brown-DK	3721	Shell Pink-DK
⊕	436	Tan	3776	Mahogany-LT
○	3772	Desert Sand-VY DK	610	Drab Brown-DK
=	402	Mahogany-VY LT	437	Tan-LT
⊗	436	Tan	3778	Terra Cotta-LT
☼	3772	Desert Sand-VY DK	3790	Beige Gray-UL DK
⌘	437	Tan-LT	758	Terra Cotta-VY LT
∨	739	Tan-UL VY LT	950	Desert Sand-LT
☾	3863	Mocha Beige-MD	3022	Brown Gray-MD
⊕	318	Steel Gray-LT	793	Cornflower Blue-MD
⌘	415	Pearl Gray	210	Lavender-MD
1	211	Lavender-LT	3753	Antique Blue-UL VY LT
✱	793	Cornflower Blue-MD	3042	Antique Violet-LT
◀	3752	Antique Blue-VY LT	3042	Antique Violet-LT
↘	3042	Antique Violet-LT	334	Baby Blue-MD
★	3042	Antique Violet-LT	414	Steel Gray-DK
..	318	Steel Gray-LT	210	Lavender-MD
∨	210	Lavender-MD	3752	Antique Blue-VY LT
/	775	Baby Blue-VY LT	211	Lavender-LT
«	414	Steel Gray-DK	3807	Cornflower Blue
..	318	Steel Gray-LT	3807	Cornflower Blue
∩	793	Cornflower Blue-MD	3836	Grape-LT
☼	3031	Mocha Brown-VY DK	844	Beaver Brown-UL DK
⌘	436	Tan	632	Desert Sand-UL VY DK

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	229	90	218	85	196	77
210	Lavender-MD	475	187	452	177	407	160
211	Lavender-LT	93	36	88	34	79	31
225	Shell Pink-UL VY LT	101	39	96	37	86	33
301	Mahogany-MD	6	2	6	2	5	1
310	Black	3423	1347	3260	1283	2934	1155
317	Pewter Gray	1110	437	1057	416	951	374
318	Steel Gray-LT	981	386	934	367	841	331
334	Baby Blue-MD	252	99	240	94	216	85
341	Blue Violet-LT	52	20	50	19	45	17
372	Mustard-LT	115	45	109	42	98	38
402	Mahogany-VY LT	25	9	24	9	22	8
413	Pewter Gray -DK	368	144	350	137	315	124
414	Steel Gray-DK	1219	479	1161	457	1045	411
415	Pearl Gray	252	99	240	94	216	85
420	Hazelnut Brown-DK	32	12	30	11	27	10
433	Brown-MD	24	9	23	9	21	8
435	Brown-VY LT	157	61	149	58	134	52
436	Tan	260	102	248	97	223	87
437	Tan-LT	120	47	115	45	103	40
451	Shell Gray-DK	333	131	317	124	285	112
452	Shell Gray-MD	181	71	172	67	155	61
453	Shell Gray-LT	166	65	158	62	142	55
535	Ash Gray-VY LT	195	76	186	73	167	65
543	Beige Brown-UL VY LT	40	15	38	14	35	13
610	Drab Brown-DK	341	134	324	127	292	114
611	Drab Brown	230	90	219	86	197	77
612	Drab Brown-LT	95	37	91	35	82	32
613	Drab Brown-VY LT	114	44	109	42	98	38
632	Desert Sand-UL VY DK	218	85	207	81	186	73
640	Beige Gray-VY DK	629	247	599	235	539	212
642	Beige Gray-DK	58	22	55	21	50	19
645	Beaver Gray-VY DK	1835	722	1747	687	1572	618
646	Beaver Gray-DK	52	20	49	19	44	17
647	Beaver Gray-MD	133	52	126	49	114	44
648	Beaver Gray-LT	104	40	99	38	89	35
712	Cream	81	31	78	30	70	27
722	Orange Spice-LT	1	1	1	1	0	1
738	Tan-VY LT	195	76	186	73	167	65
739	Tan-UL VY LT	60	23	57	22	51	20
754	Peach-LT	9	3	9	3	8	3
758	Terra Cotta-VY LT	48	18	45	17	41	16
762	Pearl Gray-VY LT	136	53	130	51	117	46
775	Baby Blue-VY LT	39	15	37	14	33	12
780	Topaz-UL VY DK	20	7	19	7	17	6
793	Cornflower Blue-MD	888	349	845	332	761	299
819	Baby Pink-LT	34	13	32	12	29	11
822	Beige Gray-LT	49	19	47	18	42	16
830	Golden Olive-DK	102	40	97	38	87	34
838	Beige Brown-VY DK	246	96	234	92	210	82
839	Beige Brown-DK	2719	1070	2589	1019	2330	917
840	Beige Brown-MD	399	157	380	149	342	134
841	Beige Brown-LT	263	103	251	98	226	88
842	Beige Brown-VY LT	95	37	91	35	82	32

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844	Beaver Brown-UL DK	6030	2374	5743	2261	5169	2035
920	Copper-MD	25	9	24	9	22	8
927	Gray Green-LT	28	11	27	10	24	9
931	Antique Blue-MD	221	87	210	82	189	74
934	Black Avocado Green	4767	1876	4540	1787	4086	1608
938	Coffee Brown-UL DK	79	31	75	29	67	26
945	Tawny	39	15	37	14	33	12
948	Peach-VY LT	3	1	3	1	3	1
950	Desert Sand-LT	185	72	176	69	159	62
951	Tawny -LT	5	1	5	1	5	1
975	Golden Brown-DK	12	4	11	4	10	3
977	Golden Brown-LT	4	1	4	1	3	1
3021	Brown Gray -VY DK	8443	3324	8041	3165	7237	2849
3022	Brown Gray -MD	337	132	321	126	288	113
3023	Brown Gray -LT	185	72	176	69	158	62
3024	Brown Gray -VY LT	43	16	41	16	37	14
3031	Mocha Brown-VY DK	3972	1563	3782	1488	3404	1340
3032	Mocha Brown-MD	240	94	228	89	205	80
3042	Antique Violet-LT	578	227	551	216	496	195
3045	Yellow Beige-DK	4	1	4	1	3	1
3051	Green Gray-DK	22	8	21	8	19	7
3064	Desert Sand	241	94	229	90	206	81
3072	Beaver Gray-VY LT	101	39	96	37	86	33
3371	Black Brown	9422	3709	8974	3533	8076	3179
3721	Shell Pink-DK	26	10	25	9	22	8
3743	Antique Violet-VY LT	48	18	46	18	41	16
3747	Blue Violet-VY LT	111	43	105	41	95	37
3752	Antique Blue-VY LT	192	75	183	72	165	64
3753	Antique Blue-UL VY LT	53	20	51	20	45	17
3756	Baby Blue-UL VY LT	25	9	24	9	22	8
3768	Gray Green-DK	167	65	159	62	143	56
3770	Tawny -VY LT	14	5	13	5	12	4
3772	Desert Sand-VY DK	169	66	161	63	145	57
3774	Desert Sand-VY LT	14	5	13	5	12	4
3776	Mahogany-LT	53	20	51	20	46	18
3778	Terra Cotta-LT	106	41	101	39	91	35
3781	Mocha Brown-DK	727	286	692	272	623	245
3782	Mocha Brown-LT	104	40	99	38	89	35
3787	Brown Gray -DK	1677	660	1597	628	1438	566
3790	Beige Gray-UL DK	1127	443	1073	422	966	380
3799	Pewter Gray -VY DK	4634	1824	4414	1737	3972	1563
3807	Cornflower Blue	531	209	506	199	455	179
3823	Yellow -UL Pale	1	1	1	1	1	1
3825	Pumpkin-Pale	3	1	2	1	2	1
3828	Hazelnut Brown	17	6	16	6	15	5
3836	Grape-LT	115	45	110	43	99	38
3856	Mahogany-UL VY LT	43	16	41	16	37	14
3858	Rosewood-MD	63	24	60	23	54	21
3859	Rosewood-LT	100	39	96	37	86	33
3860	Cocoa	94	37	90	35	81	31
3861	Cocoa-LT	113	44	107	42	97	38
3862	Mocha Beige-DK	151	59	144	56	130	51
3863	Mocha Beige-MD	474	186	452	177	407	160
3864	Mocha Beige-LT	342	134	325	127	293	115
3865	Winter White	293	115	279	109	251	98
Ecru	Ecru	12	4	12	4	11	4

Extended thread usage table.

DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		10		12		24	
1	White 1	353	139	294	116	147	58
210	Lavender-MD	733	288	611	240	305	120
211	Lavender-LT	142	56	119	47	59	23
225	Shell Pink-UL VY LT	155	59	129	50	65	25
301	Mahogany-MD	9	2	8	2	4	1
310	Black	5281	2079	4401	1733	2201	866
317	Pewter Gray	1712	673	1427	561	713	281
318	Steel Gray-LT	1514	596	1262	497	631	248
334	Baby Blue-MD	389	153	324	128	162	64
341	Blue Violet-LT	81	31	68	26	34	13
372	Mustard-LT	176	68	147	57	74	29
402	Mahogany-VY LT	40	14	33	12	17	6
413	Pewter Gray -DK	567	223	473	186	236	93
414	Steel Gray-DK	1881	740	1568	617	784	308
415	Pearl Gray	389	153	324	128	162	64
420	Hazelnut Brown-DK	49	18	41	15	20	8
433	Brown-MD	38	14	32	12	16	6
435	Brown-VY LT	241	94	201	78	101	39
436	Tan	401	157	335	131	167	65
437	Tan-LT	185	72	155	60	77	30
451	Shell Gray-DK	513	202	428	168	214	84
452	Shell Gray-MD	279	110	233	92	116	46
453	Shell Gray-LT	256	99	213	83	107	41
535	Ash Gray-VY LT	301	117	251	98	125	49
543	Beige Brown-UL VY LT	63	23	53	20	26	10
610	Drab Brown-DK	526	205	438	171	219	86
611	Drab Brown	355	139	296	116	148	58
612	Drab Brown-LT	148	58	123	48	62	24
613	Drab Brown-VY LT	176	68	147	57	74	29
632	Desert Sand-UL VY DK	335	131	279	110	140	55
640	Beige Gray-VY DK	970	382	809	318	404	159
642	Beige Gray-DK	90	34	75	29	38	14
645	Beaver Gray-VY DK	2830	1112	2358	927	1179	464
646	Beaver Gray-DK	79	31	66	26	33	13
647	Beaver Gray-MD	205	79	171	66	86	33
648	Beaver Gray-LT	160	63	134	53	67	26
712	Cream	126	49	105	41	53	20
722	Orange Spice-LT	0	2	0	2	0	1
738	Tan-VY LT	301	117	251	98	125	49
739	Tan-UL VY LT	92	36	77	30	38	15
754	Peach-LT	14	5	12	5	6	2
758	Terra Cotta-VY LT	74	29	62	24	31	12
762	Pearl Gray-VY LT	211	83	176	69	88	35
775	Baby Blue-VY LT	59	22	50	18	25	9
780	Topaz-UL VY DK	31	11	26	9	13	5
793	Cornflower Blue-MD	1370	538	1142	449	571	224
819	Baby Pink-LT	52	20	44	17	22	8
822	Beige Gray-LT	76	29	63	24	32	12
830	Golden Olive-DK	157	61	131	51	65	26
838	Beige Brown-VY DK	378	148	315	123	158	62
839	Beige Brown-DK	4194	1651	3495	1376	1748	688
840	Beige Brown-MD	616	241	513	201	257	101
841	Beige Brown-LT	407	158	339	132	170	66
842	Beige Brown-VY LT	148	58	123	48	62	24

844	Beaver Brown-UL DK	9304	3663	7754	3053	3877	1526
920	Copper-MD	40	14	33	12	17	6
927	Gray Green-LT	43	16	36	14	18	7
931	Antique Blue-MD	340	133	284	111	142	56
934	Black Avocado Green	7355	2894	6129	2412	3065	1206
938	Coffee Brown-UL DK	121	47	101	39	50	20
945	Tawny	59	22	50	18	25	9
948	Peach-VY LT	5	2	5	2	2	1
950	Desert Sand-LT	286	112	239	93	119	47
951	Tawny -LT	9	2	8	2	4	1
975	Golden Brown-DK	18	5	15	5	8	2
977	Golden Brown-LT	5	2	5	2	2	1
3021	Brown Gray -VY DK	13027	5128	10856	4274	5428	2137
3022	Brown Gray -MD	518	203	432	170	216	85
3023	Brown Gray -LT	284	112	237	93	119	47
3024	Brown Gray -VY LT	67	25	56	21	28	11
3031	Mocha Brown-VY DK	6127	2412	5106	2010	2553	1005
3032	Mocha Brown-MD	369	144	308	120	154	60
3042	Antique Violet-LT	893	351	744	293	372	146
3045	Yellow Beige-DK	5	2	5	2	2	1
3051	Green Gray-DK	34	13	29	11	14	5
3064	Desert Sand	371	146	309	122	155	61
3072	Beaver Gray-VY LT	155	59	129	50	65	25
3371	Black Brown	14537	5722	12114	4769	6057	2384
3721	Shell Pink-DK	40	14	33	12	17	6
3743	Antique Violet-VY LT	74	29	62	24	31	12
3747	Blue Violet-VY LT	171	67	143	56	71	28
3752	Antique Blue-VY LT	297	115	248	96	124	48
3753	Antique Blue-UL VY LT	81	31	68	26	34	13
3756	Baby Blue-UL VY LT	40	14	33	12	17	6
3768	Gray Green-DK	257	101	215	84	107	42
3770	Tawny -VY LT	22	7	18	6	9	3
3772	Desert Sand-VY DK	261	103	218	86	109	43
3774	Desert Sand-VY LT	22	7	18	6	9	3
3776	Mahogany-LT	83	32	69	27	35	14
3778	Terra Cotta-LT	164	63	137	53	68	26
3781	Mocha Brown-DK	1121	441	935	368	467	184
3782	Mocha Brown-LT	160	63	134	53	67	26
3787	Brown Gray -DK	2588	1019	2157	849	1079	425
3790	Beige Gray-UL DK	1739	684	1449	570	725	285
3799	Pewter Gray -VY DK	7150	2813	5958	2345	2979	1172
3807	Cornflower Blue	819	322	683	269	341	134
3823	Yellow -UL Pale	2	2	2	2	1	1
3825	Pumpkin-Pale	4	2	3	2	2	1
3828	Hazelnut Brown	27	9	23	8	11	4
3836	Grape-LT	178	68	149	57	74	29
3856	Mahogany-UL VY LT	67	25	56	21	28	11
3858	Rosewood-MD	97	38	81	32	41	16
3859	Rosewood-LT	155	59	129	50	65	25
3860	Cocoa	146	56	122	47	61	23
3861	Cocoa-LT	175	68	146	57	73	29
3862	Mocha Beige-DK	234	92	195	77	98	38
3863	Mocha Beige-MD	733	288	611	240	305	120
3864	Mocha Beige-LT	527	207	440	173	220	86
3865	Winter White	452	176	377	147	188	74
Ecru	Ecru	20	7	17	6	8	3

Extended thread usage table.

DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		25		26		27	
1	White 1	141	55	136	53	131	51
210	Lavender-MD	293	115	282	111	271	107
211	Lavender-LT	57	22	55	21	53	21
225	Shell Pink-UL VY LT	62	24	60	23	57	22
301	Mahogany-MD	4	1	3	1	3	1
310	Black	2112	832	2031	800	1956	770
317	Pewter Gray	685	269	658	259	634	249
318	Steel Gray-LT	606	238	582	229	561	221
334	Baby Blue-MD	156	61	150	59	144	57
341	Blue Violet-LT	32	12	31	12	30	11
372	Mustard-LT	71	27	68	26	65	25
402	Mahogany-VY LT	16	6	15	6	15	5
413	Pewter Gray -DK	227	89	218	86	210	83
414	Steel Gray-DK	752	296	723	285	697	274
415	Pearl Gray	156	61	150	59	144	57
420	Hazelnut Brown-DK	19	7	19	7	18	7
433	Brown-MD	15	6	15	6	14	5
435	Brown-VY LT	96	37	93	36	89	35
436	Tan	161	63	154	60	149	58
437	Tan-LT	74	29	71	28	69	27
451	Shell Gray-DK	205	81	197	78	190	75
452	Shell Gray-MD	112	44	107	42	103	41
453	Shell Gray-LT	102	40	98	38	95	37
535	Ash Gray -VY LT	120	47	116	45	111	43
543	Beige Brown-UL VY LT	25	9	24	9	23	9
610	Drab Brown-DK	210	82	202	79	195	76
611	Drab Brown	142	55	136	53	131	51
612	Drab Brown-LT	59	23	57	22	55	21
613	Drab Brown-VY LT	71	27	68	26	65	25
632	Desert Sand-UL VY DK	134	53	129	51	124	49
640	Beige Gray-VY DK	388	153	373	147	359	141
642	Beige Gray-DK	36	14	35	13	33	13
645	Beaver Gray-VY DK	1132	445	1088	428	1048	412
646	Beaver Gray-DK	32	12	30	12	29	11
647	Beaver Gray-MD	82	32	79	30	76	29
648	Beaver Gray-LT	64	25	62	24	59	23
712	Cream	50	19	48	19	47	18
722	Orange Spice-LT	0	1	0	1	0	1
738	Tan-VY LT	120	47	116	45	111	43
739	Tan-UL VY LT	37	14	35	14	34	13
754	Peach-LT	6	2	6	2	5	2
758	Terra Cotta-VY LT	30	12	28	11	27	11
762	Pearl Gray-VY LT	84	33	81	32	78	31
775	Baby Blue-VY LT	24	9	23	8	22	8
780	Topaz-UL VY DK	12	4	12	4	11	4
793	Cornflower Blue-MD	548	215	527	207	507	199
819	Baby Pink-LT	21	8	20	8	19	7
822	Beige Gray-LT	30	12	29	11	28	11
830	Golden Olive-DK	63	24	60	24	58	23
838	Beige Brown-VY DK	151	59	145	57	140	55
839	Beige Brown-DK	1678	660	1613	635	1553	611
840	Beige Brown-MD	246	96	237	93	228	89
841	Beige Brown-LT	163	63	156	61	151	59
842	Beige Brown-VY LT	59	23	57	22	55	21

844	Beaver Brown-UL DK	3722	1465	3579	1409	3446	1357
920	Copper-MD	16	6	15	6	15	5
927	Gray Green-LT	17	6	17	6	16	6
931	Antique Blue-MD	136	53	131	51	126	49
934	Black Avocado Green	2942	1158	2829	1113	2724	1072
938	Coffee Brown-UL DK	48	19	46	18	45	17
945	Tawny	24	9	23	8	22	8
948	Peach-VY LT	2	1	2	1	2	1
950	Desert Sand-LT	114	45	110	43	106	41
951	Tawny -LT	4	1	3	1	3	1
975	Golden Brown-DK	7	2	7	2	7	2
977	Golden Brown-LT	2	1	2	1	2	1
3021	Brown Gray -VY DK	5211	2051	5010	1972	4825	1899
3022	Brown Gray -MD	207	81	199	78	192	75
3023	Brown Gray -LT	114	45	109	43	105	41
3024	Brown Gray -VY LT	27	10	26	10	25	9
3031	Mocha Brown-VY DK	2451	965	2357	928	2269	893
3032	Mocha Brown-MD	148	58	142	55	137	53
3042	Antique Violet-LT	357	140	343	135	331	130
3045	Yellow Beige-DK	2	1	2	1	2	1
3051	Green Gray-DK	14	5	13	5	13	5
3064	Desert Sand	148	58	143	56	137	54
3072	Beaver Gray-VY LT	62	24	60	23	57	22
3371	Black Brown	5815	2289	5591	2201	5384	2119
3721	Shell Pink-DK	16	6	15	6	15	5
3743	Antique Violet-VY LT	30	12	28	11	27	11
3747	Blue Violet-VY LT	68	27	66	26	63	25
3752	Antique Blue-VY LT	119	46	114	44	110	43
3753	Antique Blue-UL VY LT	32	12	31	12	30	11
3756	Baby Blue-UL VY LT	16	6	15	6	15	5
3768	Gray Green-DK	103	40	99	39	95	37
3770	Tawny -VY LT	9	3	8	3	8	3
3772	Desert Sand-VY DK	104	41	100	39	97	38
3774	Desert Sand-VY LT	9	3	8	3	8	3
3776	Mahogany-LT	33	13	32	12	31	12
3778	Terra Cotta-LT	66	25	63	24	61	23
3781	Mocha Brown-DK	449	176	431	170	415	163
3782	Mocha Brown-LT	64	25	62	24	59	23
3787	Brown Gray -DK	1035	408	996	392	959	377
3790	Beige Gray-UL DK	696	274	669	263	644	253
3799	Pewter Gray -VY DK	2860	1125	2750	1082	2648	1042
3807	Cornflower Blue	328	129	315	124	303	119
3823	Yellow -UL Pale	1	1	1	1	1	1
3825	Pumpkin-Pale	1	1	1	1	1	1
3828	Hazelnut Brown	11	4	10	3	10	3
3836	Grape-LT	71	27	69	26	66	25
3856	Mahogany-UL VY LT	27	10	26	10	25	9
3858	Rosewood-MD	39	15	37	15	36	14
3859	Rosewood-LT	62	24	60	23	57	22
3860	Cocoa	58	22	56	21	54	21
3861	Cocoa-LT	70	27	67	26	65	25
3862	Mocha Beige-DK	94	37	90	35	87	34
3863	Mocha Beige-MD	293	115	282	111	271	107
3864	Mocha Beige-LT	211	83	203	80	195	77
3865	Winter White	181	71	174	68	167	65
Ecru	Ecru	8	3	8	3	7	3

Extended thread usage table.

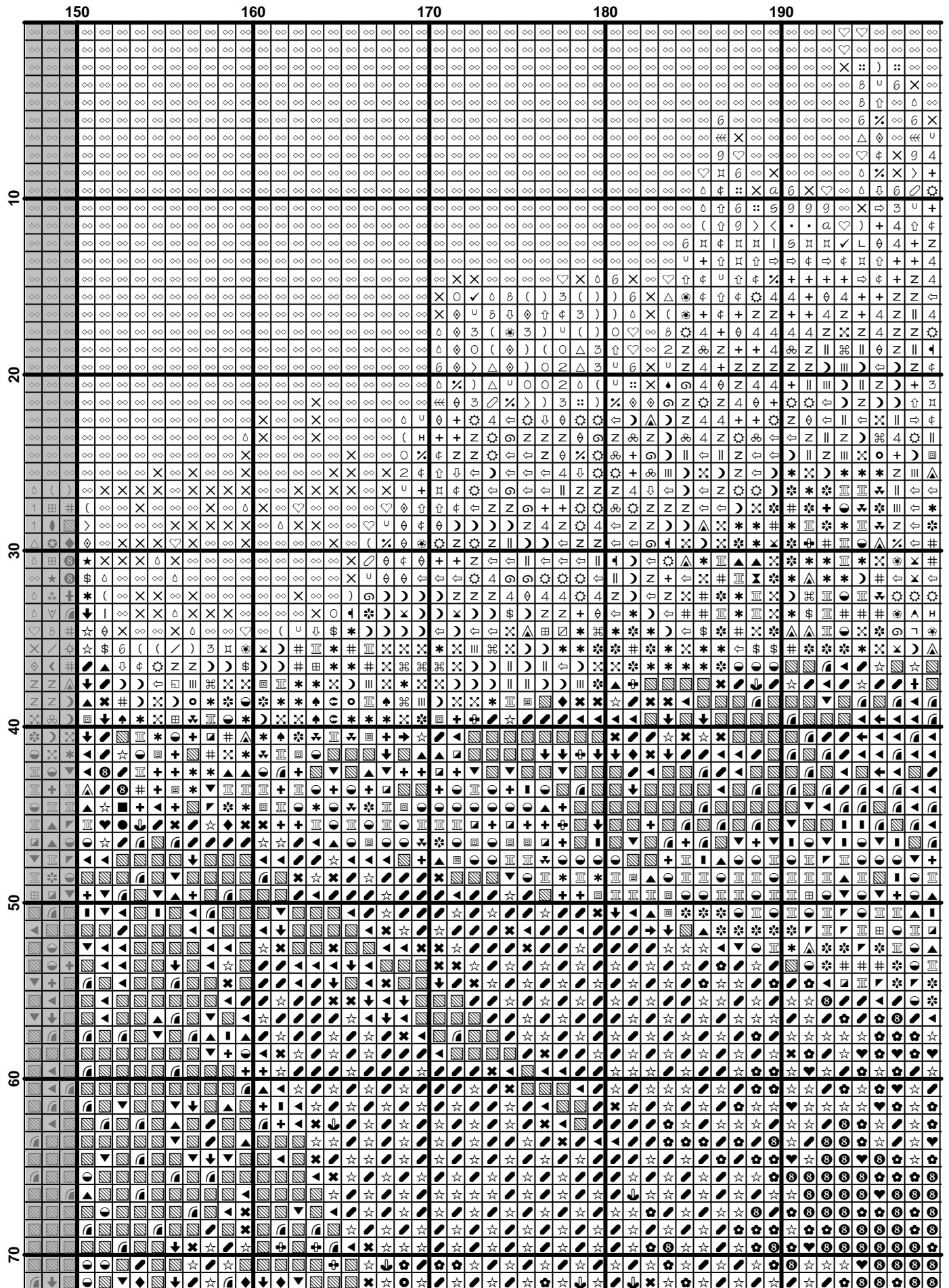
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		28		30		32	
1	White 1	126	50	118	46	110	43
210	Lavender-MD	262	103	244	96	229	90
211	Lavender-LT	51	20	47	19	44	17
225	Shell Pink-UL VY LT	55	21	52	20	48	19
301	Mahogany-MD	3	1	3	1	3	1
310	Black	1886	743	1760	693	1650	650
317	Pewter Gray	611	240	571	224	535	210
318	Steel Gray-LT	541	213	505	199	473	186
334	Baby Blue-MD	139	55	130	51	122	48
341	Blue Violet-LT	29	11	27	10	25	10
372	Mustard-LT	63	24	59	23	55	21
402	Mahogany-VY LT	14	5	13	5	12	5
413	Pewter Gray -DK	203	80	189	74	177	70
414	Steel Gray-DK	672	264	627	247	588	231
415	Pearl Gray	139	55	130	51	122	48
420	Hazelnut Brown-DK	17	6	16	6	15	6
433	Brown-MD	14	5	13	5	12	5
435	Brown-VY LT	86	33	80	31	75	29
436	Tan	143	56	134	52	125	49
437	Tan-LT	66	26	62	24	58	23
451	Shell Gray-DK	183	72	171	67	160	63
452	Shell Gray-MD	100	39	93	37	87	34
453	Shell Gray-LT	91	35	85	33	80	31
535	Ash Gray -VY LT	107	42	100	39	94	37
543	Beige Brown-UL VY LT	23	8	21	8	20	7
610	Drab Brown-DK	188	73	175	68	164	64
611	Drab Brown	127	50	118	46	111	43
612	Drab Brown-LT	53	21	49	19	46	18
613	Drab Brown-VY LT	63	24	59	23	55	21
632	Desert Sand-UL VY DK	120	47	112	44	105	41
640	Beige Gray-VY DK	347	136	323	127	303	119
642	Beige Gray-DK	32	12	30	11	28	11
645	Beaver Gray-VY DK	1011	397	943	371	884	348
646	Beaver Gray-DK	28	11	26	10	25	10
647	Beaver Gray-MD	73	28	68	26	64	25
648	Beaver Gray-LT	57	23	53	21	50	20
712	Cream	45	17	42	16	39	15
722	Orange Spice-LT	0	1	0	1	0	1
738	Tan-VY LT	107	42	100	39	94	37
739	Tan-UL VY LT	33	13	31	12	29	11
754	Peach-LT	5	2	5	2	5	2
758	Terra Cotta-VY LT	26	10	25	10	23	9
762	Pearl Gray-VY LT	75	30	70	28	66	26
775	Baby Blue-VY LT	21	8	20	7	19	7
780	Topaz-UL VY DK	11	4	10	4	10	3
793	Cornflower Blue-MD	489	192	457	179	428	168
819	Baby Pink-LT	19	7	17	7	16	6
822	Beige Gray-LT	27	10	25	10	24	9
830	Golden Olive-DK	56	22	52	20	49	19
838	Beige Brown-VY DK	135	53	126	49	118	46
839	Beige Brown-DK	1498	590	1398	550	1311	516
840	Beige Brown-MD	220	86	205	80	192	75
841	Beige Brown-LT	145	57	136	53	127	50
842	Beige Brown-VY LT	53	21	49	19	46	18

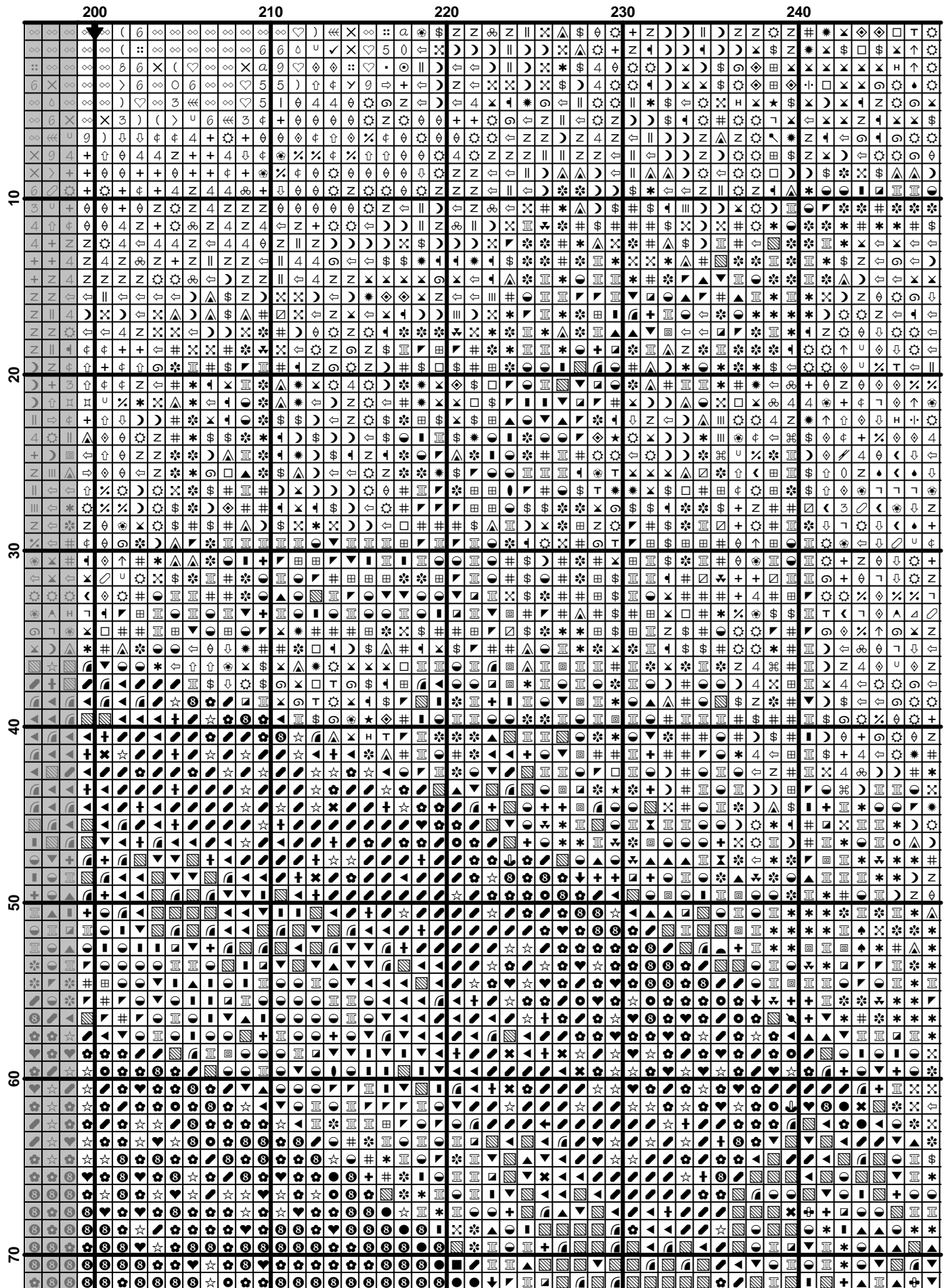
844	Beaver Brown-UL DK	3323	1308	3101	1221	2908	1145
920	Copper-MD	14	5	13	5	12	5
927	Gray Green-LT	15	6	14	5	14	5
931	Antique Blue-MD	122	48	113	44	106	42
934	Black Avocado Green	2627	1034	2452	965	2298	905
938	Coffee Brown-UL DK	43	17	40	16	38	15
945	Tawny	21	8	20	7	19	7
948	Peach-VY LT	2	1	2	1	2	1
950	Desert Sand-LT	102	40	95	37	89	35
951	Tawny -LT	3	1	3	1	3	1
975	Golden Brown-DK	6	2	6	2	6	2
977	Golden Brown-LT	2	1	2	1	2	1
3021	Brown Gray -VY DK	4652	1832	4342	1709	4071	1603
3022	Brown Gray -MD	185	73	173	68	162	64
3023	Brown Gray -LT	102	40	95	37	89	35
3024	Brown Gray -VY LT	24	9	22	8	21	8
3031	Mocha Brown-VY DK	2188	861	2042	804	1915	754
3032	Mocha Brown-MD	132	51	123	48	115	45
3042	Antique Violet-LT	319	125	298	117	279	110
3045	Yellow Beige-DK	2	1	2	1	2	1
3051	Green Gray-DK	12	5	11	4	11	4
3064	Desert Sand	132	52	124	49	116	46
3072	Beaver Gray-VY LT	55	21	52	20	48	19
3371	Black Brown	5192	2044	4846	1907	4543	1788
3721	Shell Pink-DK	14	5	13	5	12	5
3743	Antique Violet-VY LT	26	10	25	10	23	9
3747	Blue Violet-VY LT	61	24	57	22	53	21
3752	Antique Blue-VY LT	106	41	99	38	93	36
3753	Antique Blue-UL VY LT	29	11	27	10	25	10
3756	Baby Blue-UL VY LT	14	5	13	5	12	5
3768	Gray Green-DK	92	36	86	34	80	32
3770	Tawny -VY LT	8	3	7	2	7	2
3772	Desert Sand-VY DK	93	37	87	34	82	32
3774	Desert Sand-VY LT	8	3	7	2	7	2
3776	Mahogany-LT	30	12	28	11	26	10
3778	Terra Cotta-LT	59	23	55	21	51	20
3781	Mocha Brown-DK	401	158	374	147	350	138
3782	Mocha Brown-LT	57	23	53	21	50	20
3787	Brown Gray -DK	924	364	863	340	809	318
3790	Beige Gray-UL DK	621	244	580	228	543	214
3799	Pewter Gray -VY DK	2553	1005	2383	938	2234	879
3807	Cornflower Blue	293	115	273	107	256	101
3823	Yellow -UL Pale	1	1	1	1	1	1
3825	Pumpkin-Pale	1	1	1	1	1	1
3828	Hazelnut Brown	10	3	9	3	8	3
3836	Grape-LT	64	24	59	23	56	21
3856	Mahogany-UL VY LT	24	9	22	8	21	8
3858	Rosewood-MD	35	14	32	13	30	12
3859	Rosewood-LT	55	21	52	20	48	19
3860	Cocoa	52	20	49	19	46	17
3861	Cocoa-LT	62	24	58	23	55	21
3862	Mocha Beige-DK	84	33	78	31	73	29
3863	Mocha Beige-MD	262	103	244	96	229	90
3864	Mocha Beige-LT	188	74	176	69	165	65
3865	Winter White	161	63	151	59	141	55
Ecru	Ecru	7	3	7	2	6	2

	10	20	30	40	50
10	☆	☼	☼	☼	☼
20	☼	☼	☼	☼	☼
30	☼	☼	☼	☼	☼
40	☼	☼	☼	☼	☼
50	☼	☼	☼	☼	☼
60	☼	☼	☼	☼	☼
70	☼	☼	☼	☼	☼
80	☼	☼	☼	☼	☼
90	☼	☼	☼	☼	☼
100	☼	☼	☼	☼	☼
110	☼	☼	☼	☼	☼
120	☼	☼	☼	☼	☼
130	☼	☼	☼	☼	☼
140	☼	☼	☼	☼	☼
150	☼	☼	☼	☼	☼
160	☼	☼	☼	☼	☼
170	☼	☼	☼	☼	☼
180	☼	☼	☼	☼	☼
190	☼	☼	☼	☼	☼
200	☼	☼	☼	☼	☼
210	☼	☼	☼	☼	☼
220	☼	☼	☼	☼	☼
230	☼	☼	☼	☼	☼
240	☼	☼	☼	☼	☼
250	☼	☼	☼	☼	☼
260	☼	☼	☼	☼	☼
270	☼	☼	☼	☼	☼
280	☼	☼	☼	☼	☼
290	☼	☼	☼	☼	☼
300	☼	☼	☼	☼	☼
310	☼	☼	☼	☼	☼
320	☼	☼	☼	☼	☼
330	☼	☼	☼	☼	☼
340	☼	☼	☼	☼	☼
350	☼	☼	☼	☼	☼
360	☼	☼	☼	☼	☼
370	☼	☼	☼	☼	☼
380	☼	☼	☼	☼	☼
390	☼	☼	☼	☼	☼
400	☼	☼	☼	☼	☼
410	☼	☼	☼	☼	☼
420	☼	☼	☼	☼	☼
430	☼	☼	☼	☼	☼
440	☼	☼	☼	☼	☼
450	☼	☼	☼	☼	☼
460	☼	☼	☼	☼	☼
470	☼	☼	☼	☼	☼
480	☼	☼	☼	☼	☼
490	☼	☼	☼	☼	☼
500	☼	☼	☼	☼	☼
510	☼	☼	☼	☼	☼
520	☼	☼	☼	☼	☼
530	☼	☼	☼	☼	☼
540	☼	☼	☼	☼	☼
550	☼	☼	☼	☼	☼
560	☼	☼	☼	☼	☼
570	☼	☼	☼	☼	☼
580	☼	☼	☼	☼	☼
590	☼	☼	☼	☼	☼
600	☼	☼	☼	☼	☼
610	☼	☼	☼	☼	☼
620	☼	☼	☼	☼	☼
630	☼	☼	☼	☼	☼
640	☼	☼	☼	☼	☼
650	☼	☼	☼	☼	☼
660	☼	☼	☼	☼	☼
670	☼	☼	☼	☼	☼
680	☼	☼	☼	☼	☼
690	☼	☼	☼	☼	☼
700	☼	☼	☼	☼	☼
710	☼	☼	☼	☼	☼
720	☼	☼	☼	☼	☼
730	☼	☼	☼	☼	☼
740	☼	☼	☼	☼	☼
750	☼	☼	☼	☼	☼
760	☼	☼	☼	☼	☼
770	☼	☼	☼	☼	☼
780	☼	☼	☼	☼	☼
790	☼	☼	☼	☼	☼
800	☼	☼	☼	☼	☼
810	☼	☼	☼	☼	☼
820	☼	☼	☼	☼	☼
830	☼	☼	☼	☼	☼
840	☼	☼	☼	☼	☼
850	☼	☼	☼	☼	☼
860	☼	☼	☼	☼	☼
870	☼	☼	☼	☼	☼
880	☼	☼	☼	☼	☼
890	☼	☼	☼	☼	☼
900	☼	☼	☼	☼	☼
910	☼	☼	☼	☼	☼
920	☼	☼	☼	☼	☼
930	☼	☼	☼	☼	☼
940	☼	☼	☼	☼	☼
950	☼	☼	☼	☼	☼
960	☼	☼	☼	☼	☼
970	☼	☼	☼	☼	☼
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990	☼	☼	☼	☼	☼
1000	☼	☼	☼	☼	☼

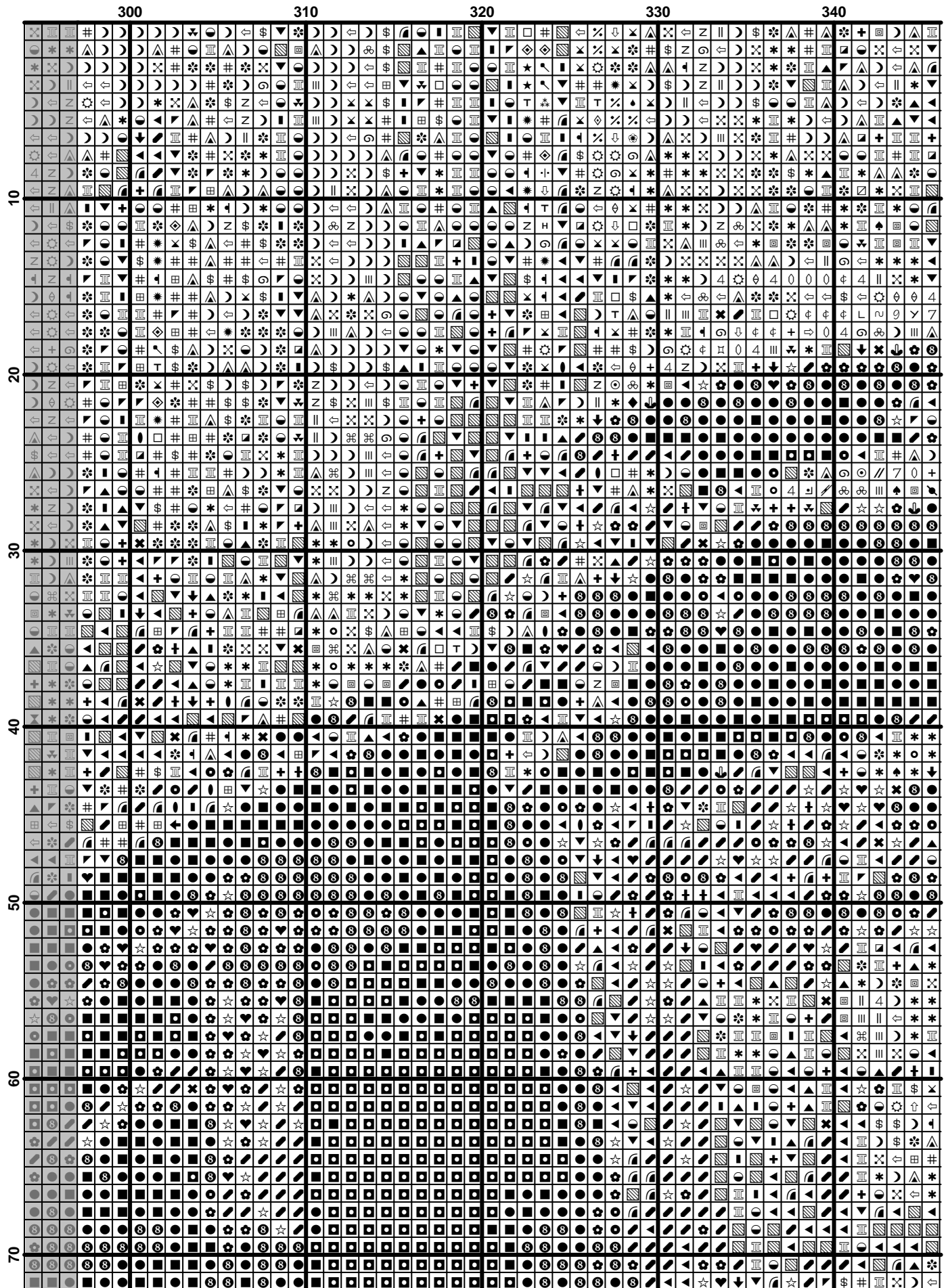
$$(11) \quad \frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$$

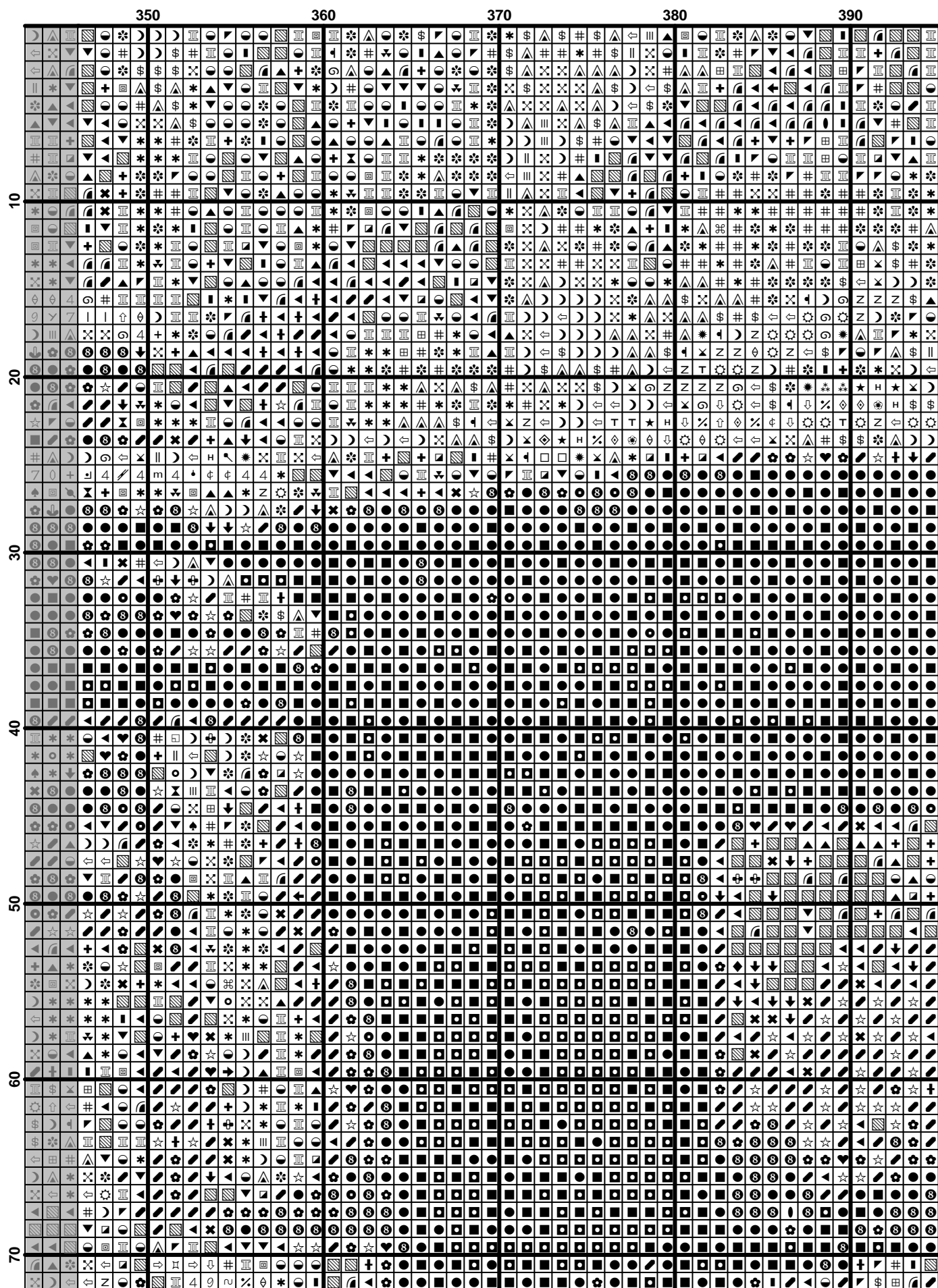
(13)

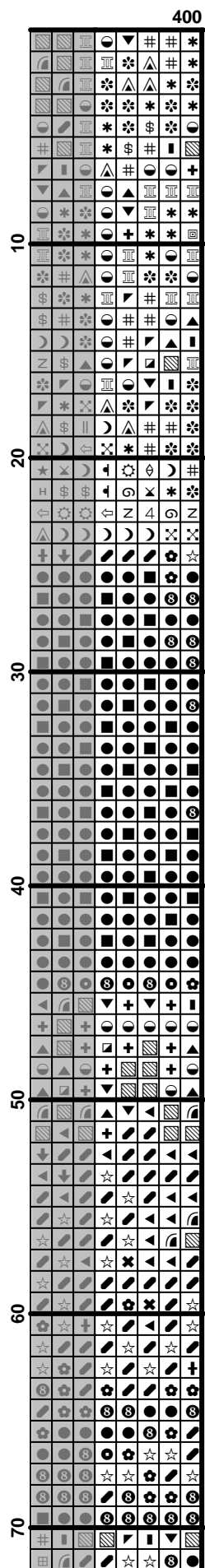


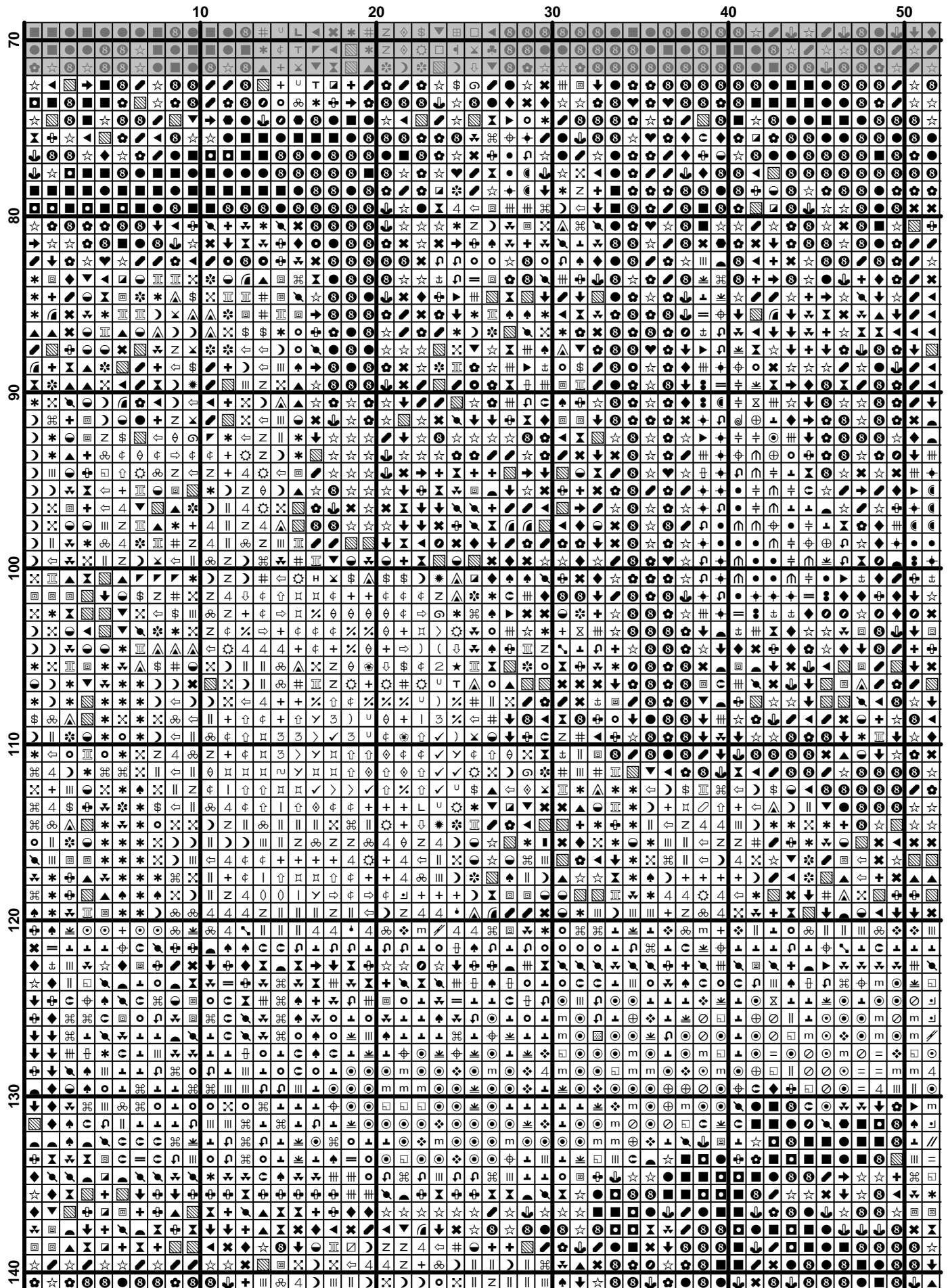


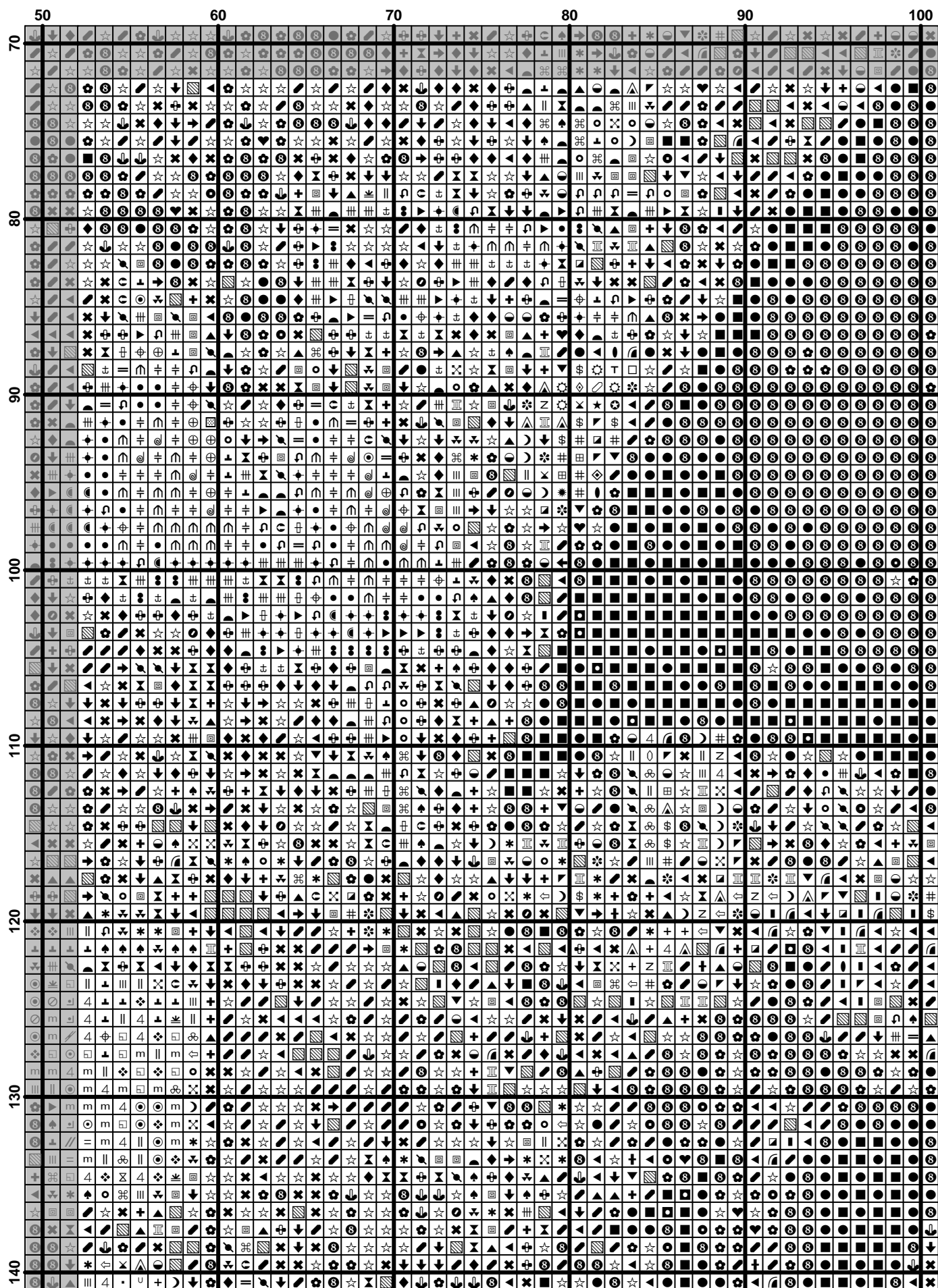
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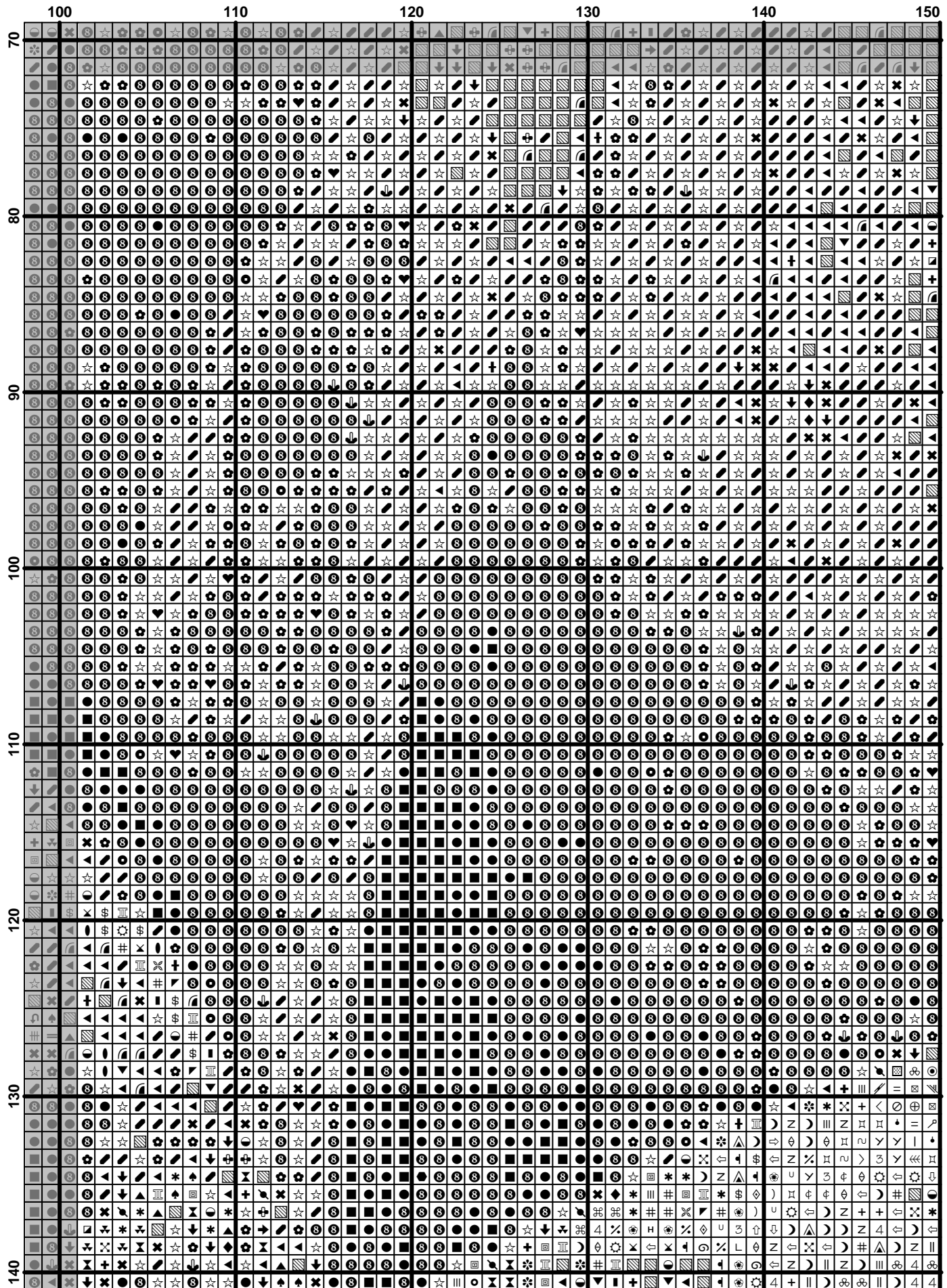


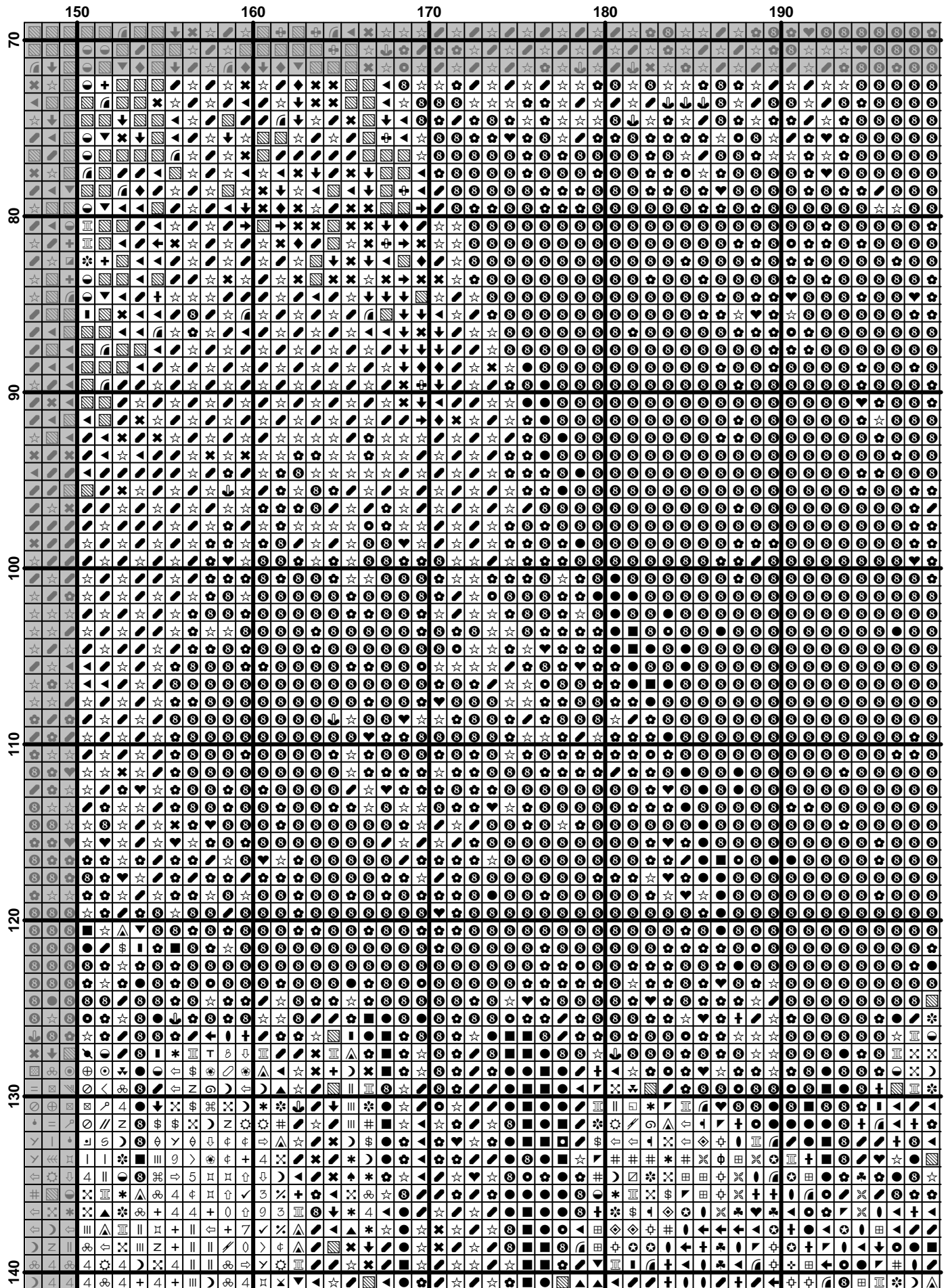


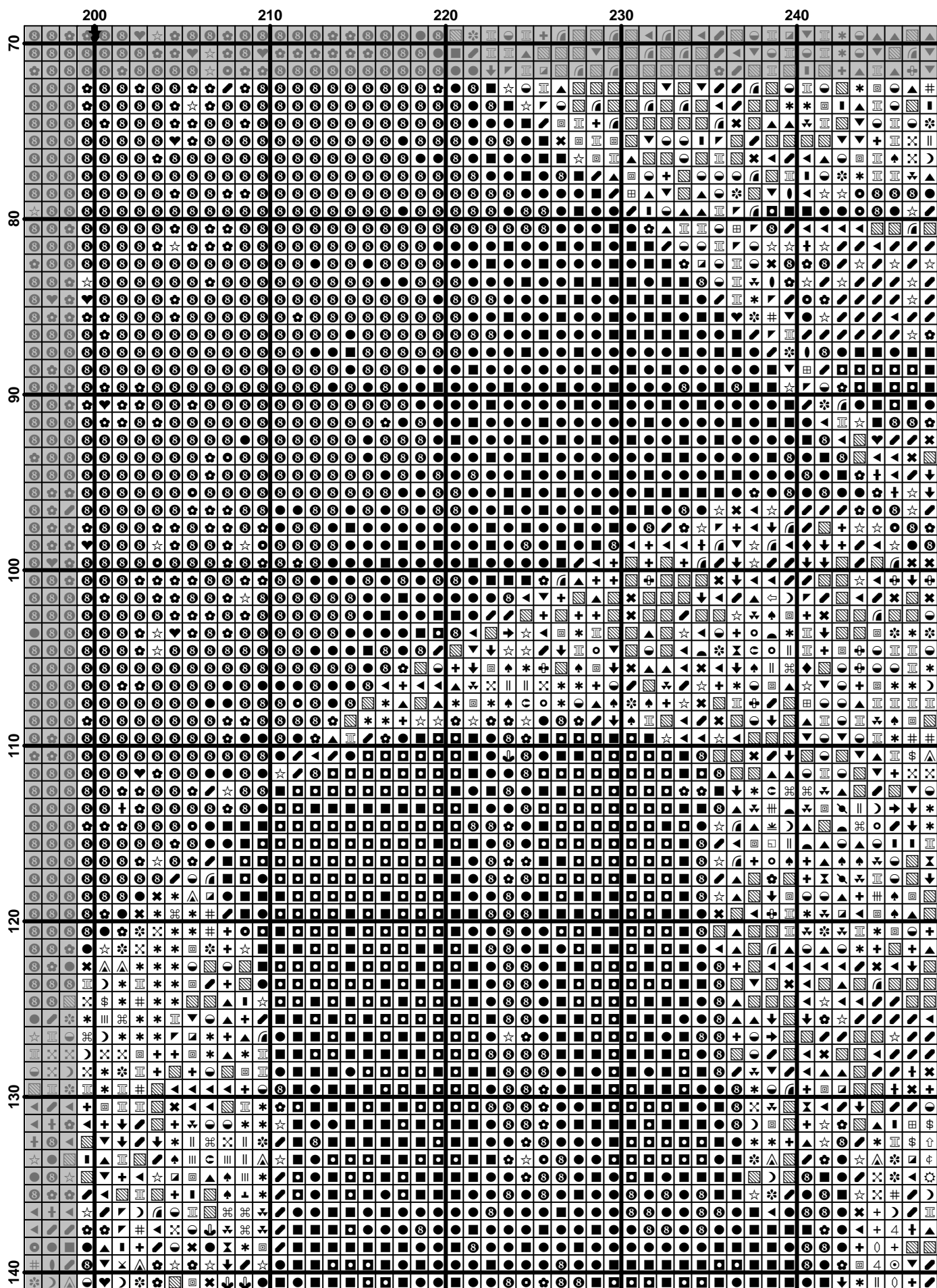


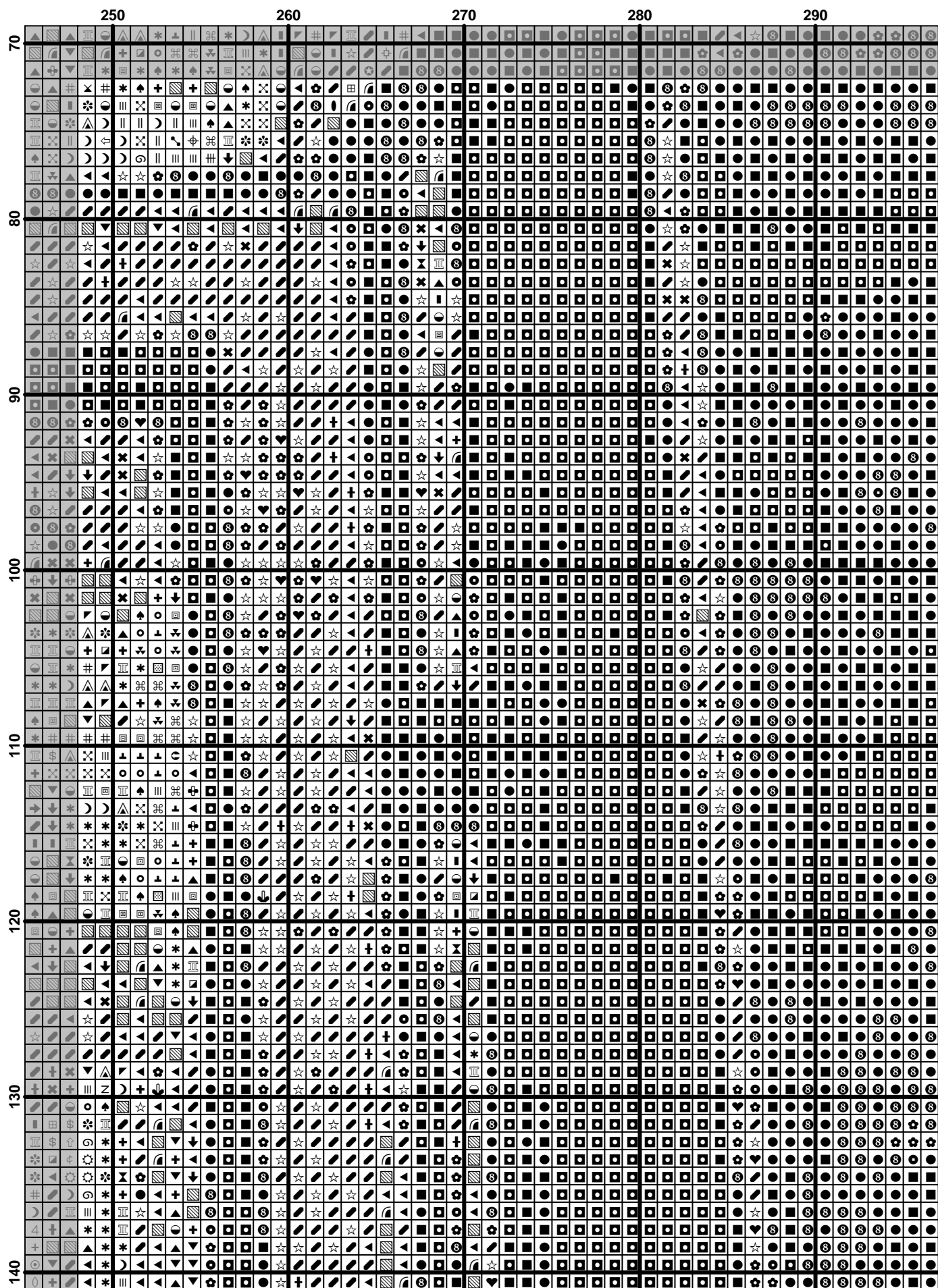


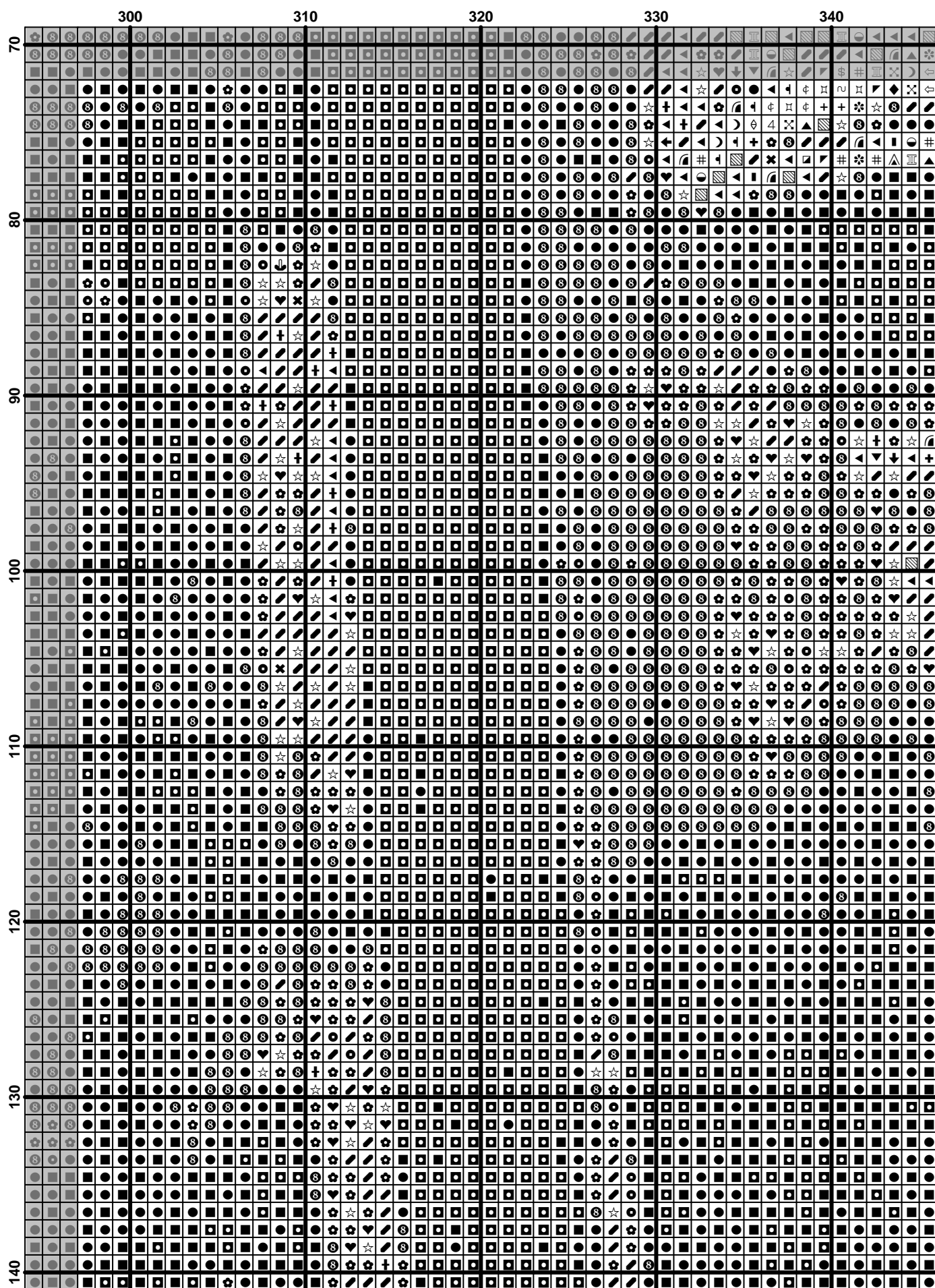


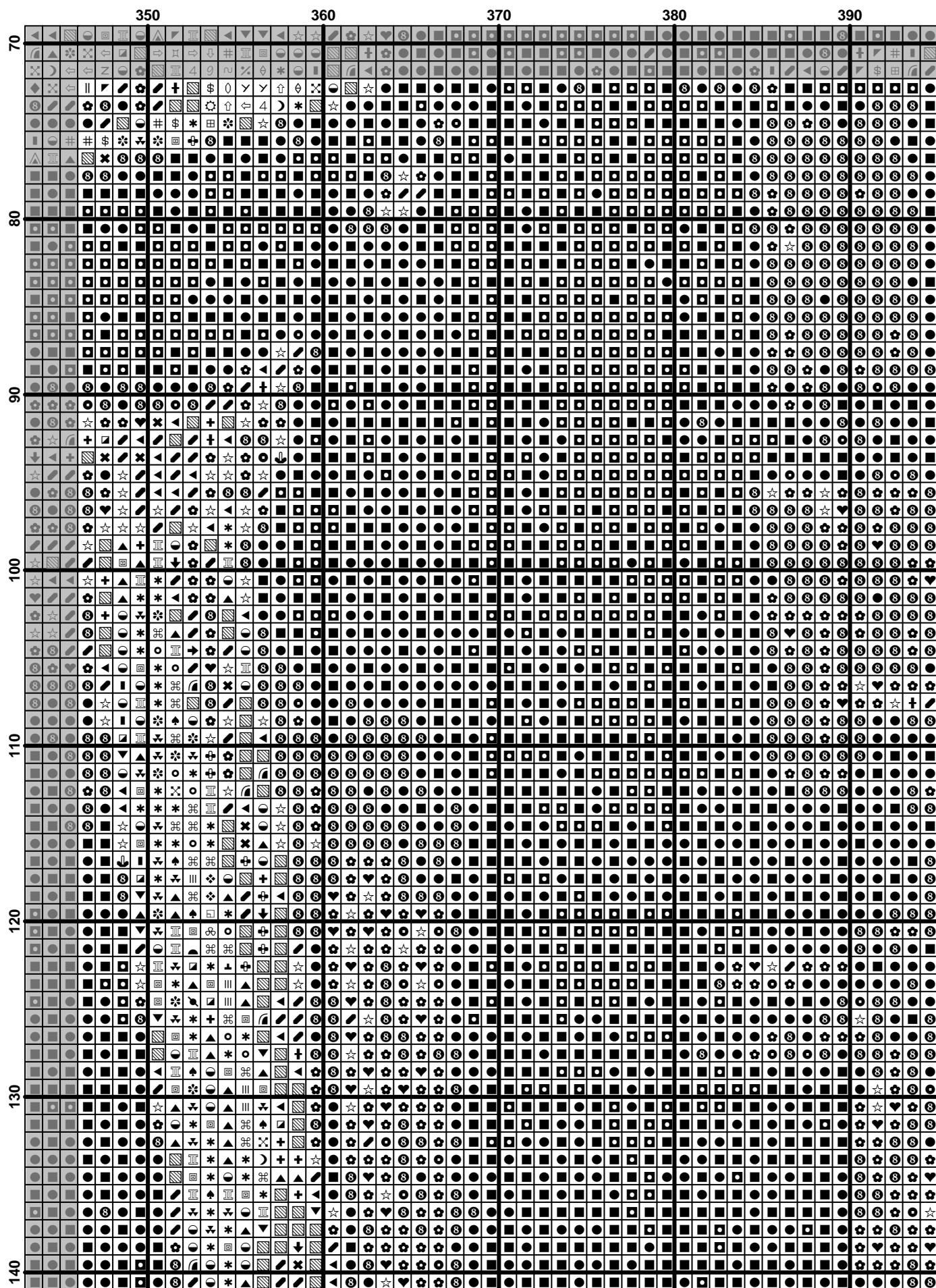


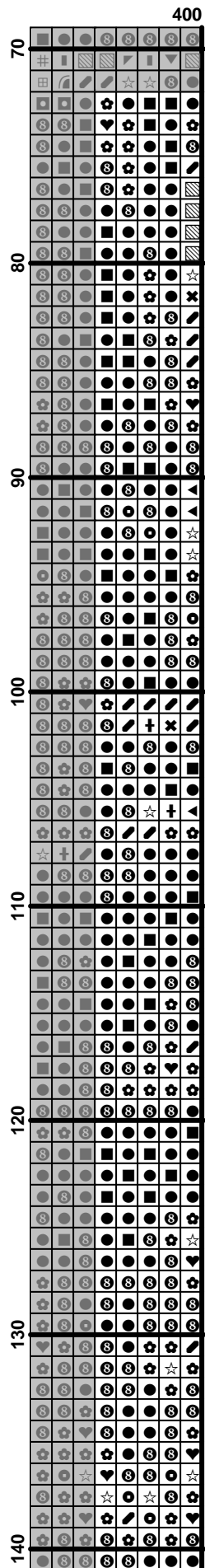




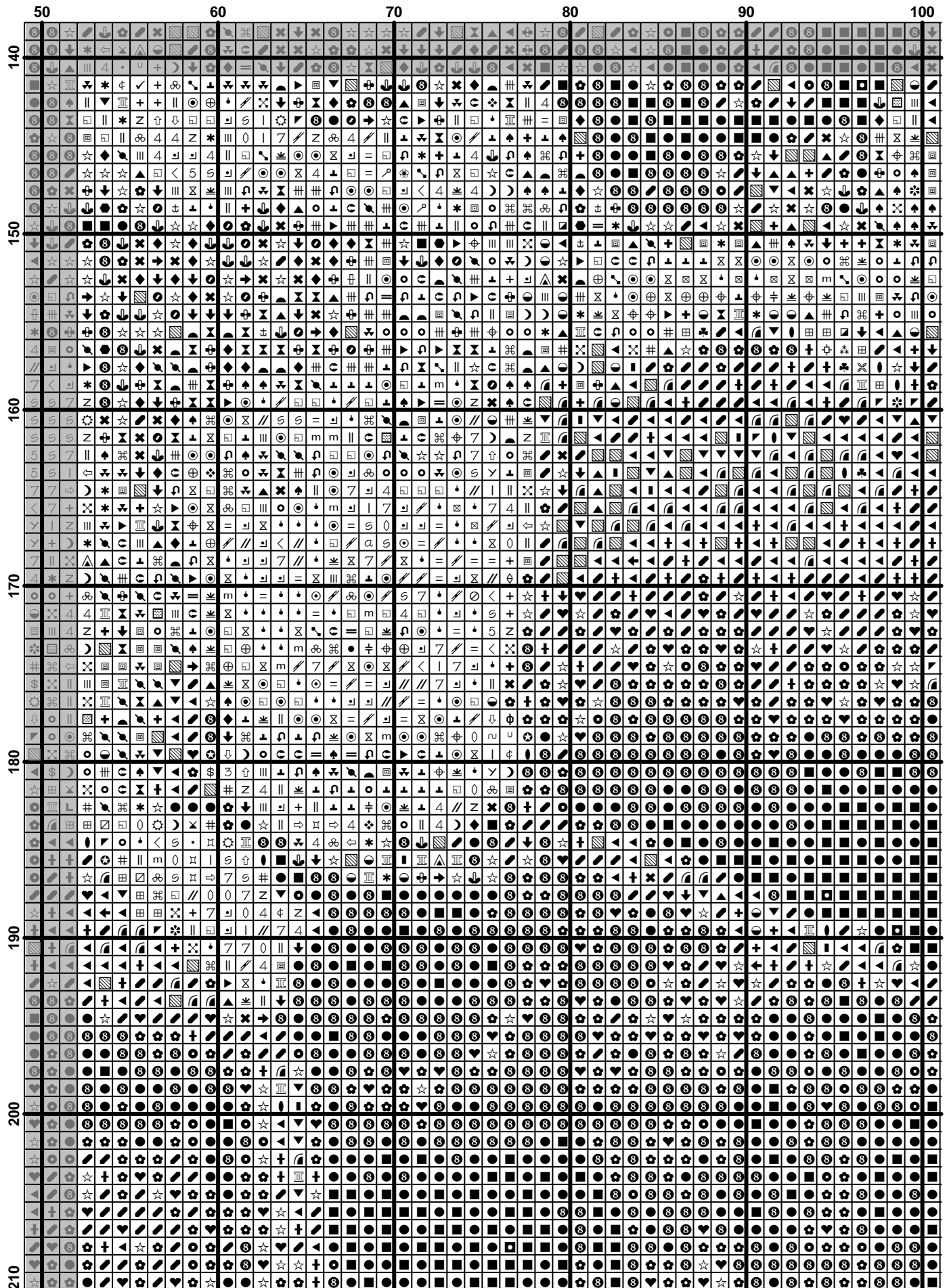








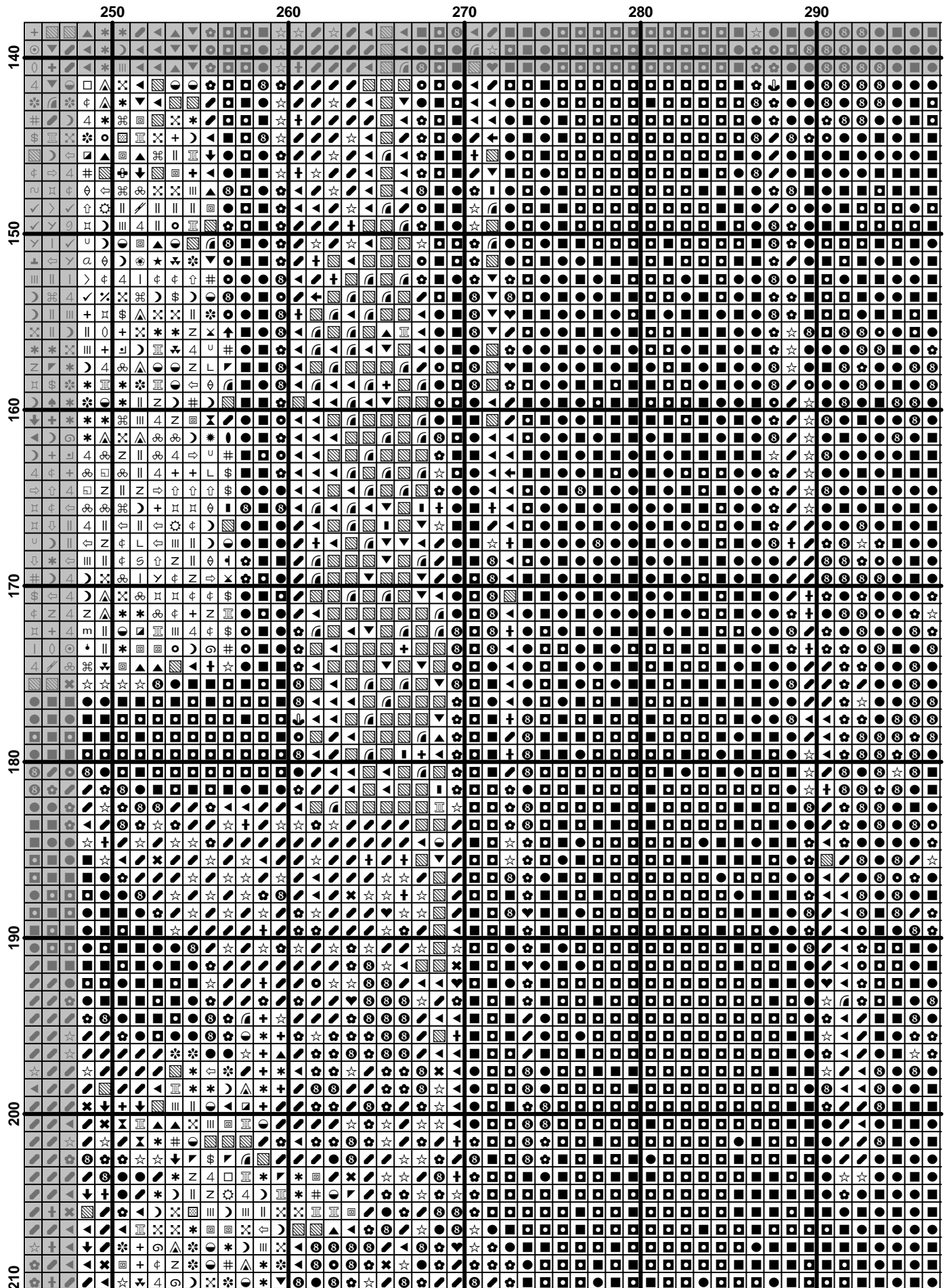
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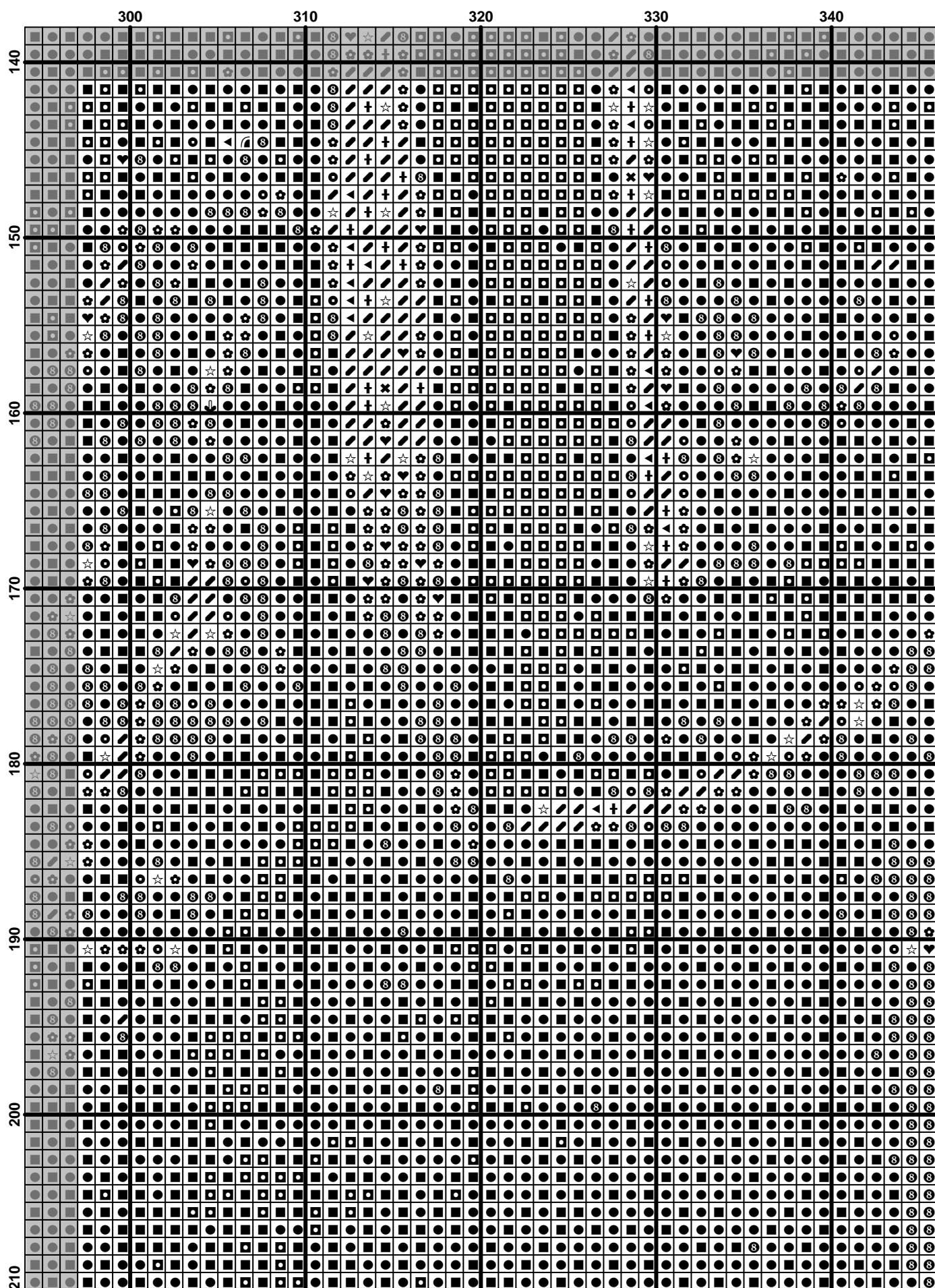


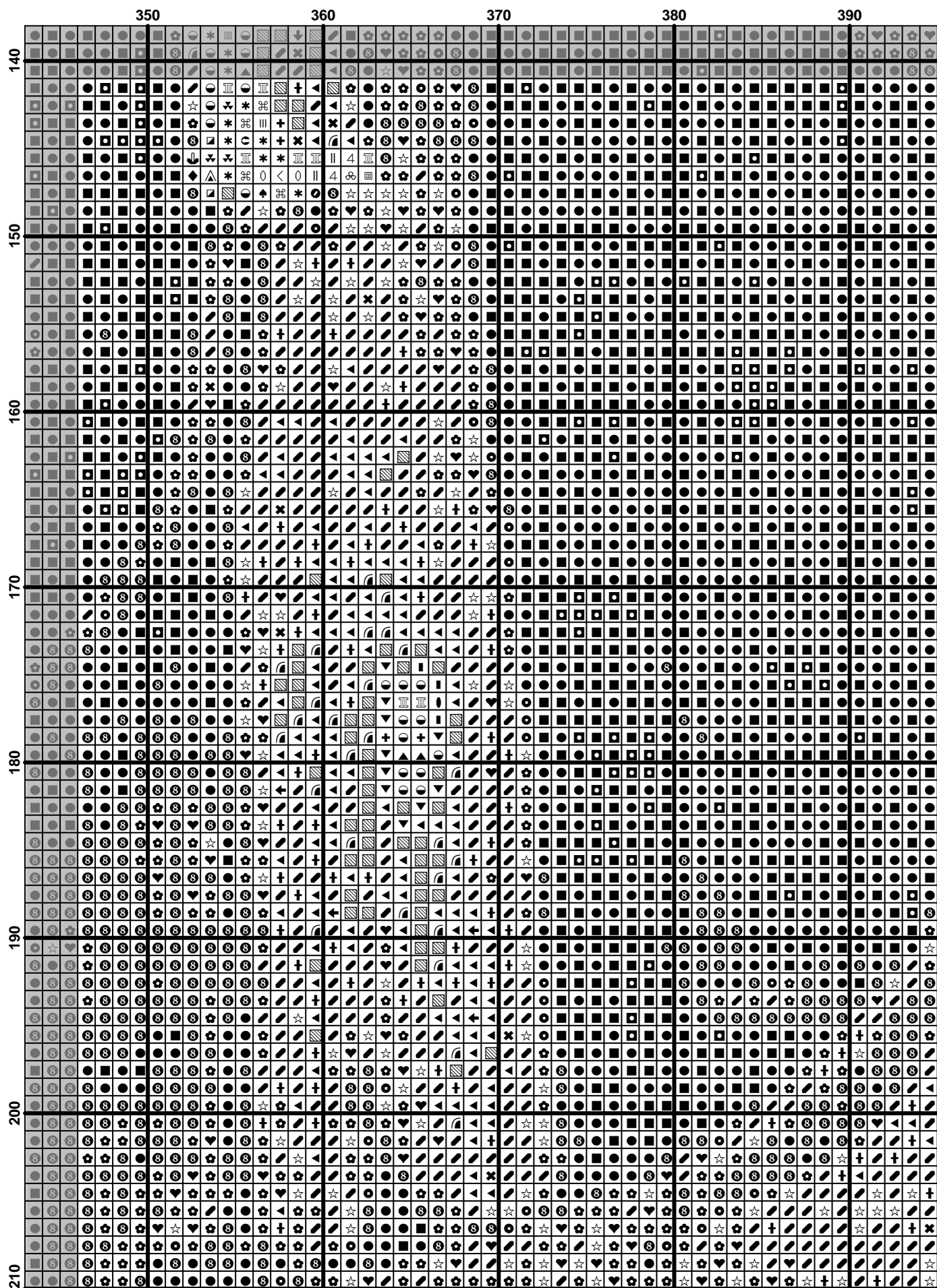
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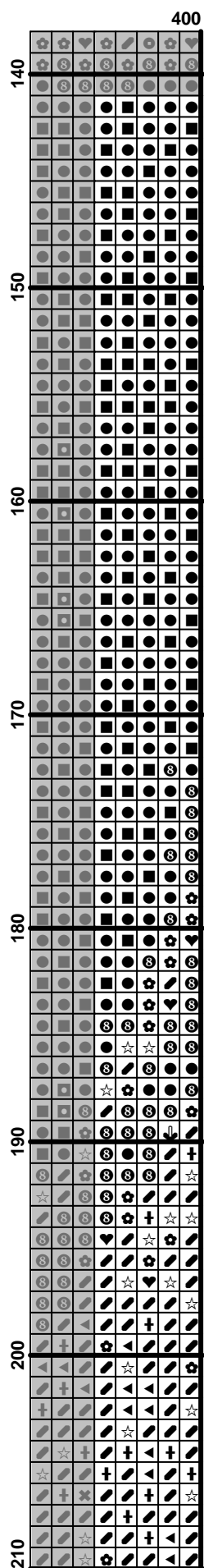
	150	160	170	180	190
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150					
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	200	210	220	230	240
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210					

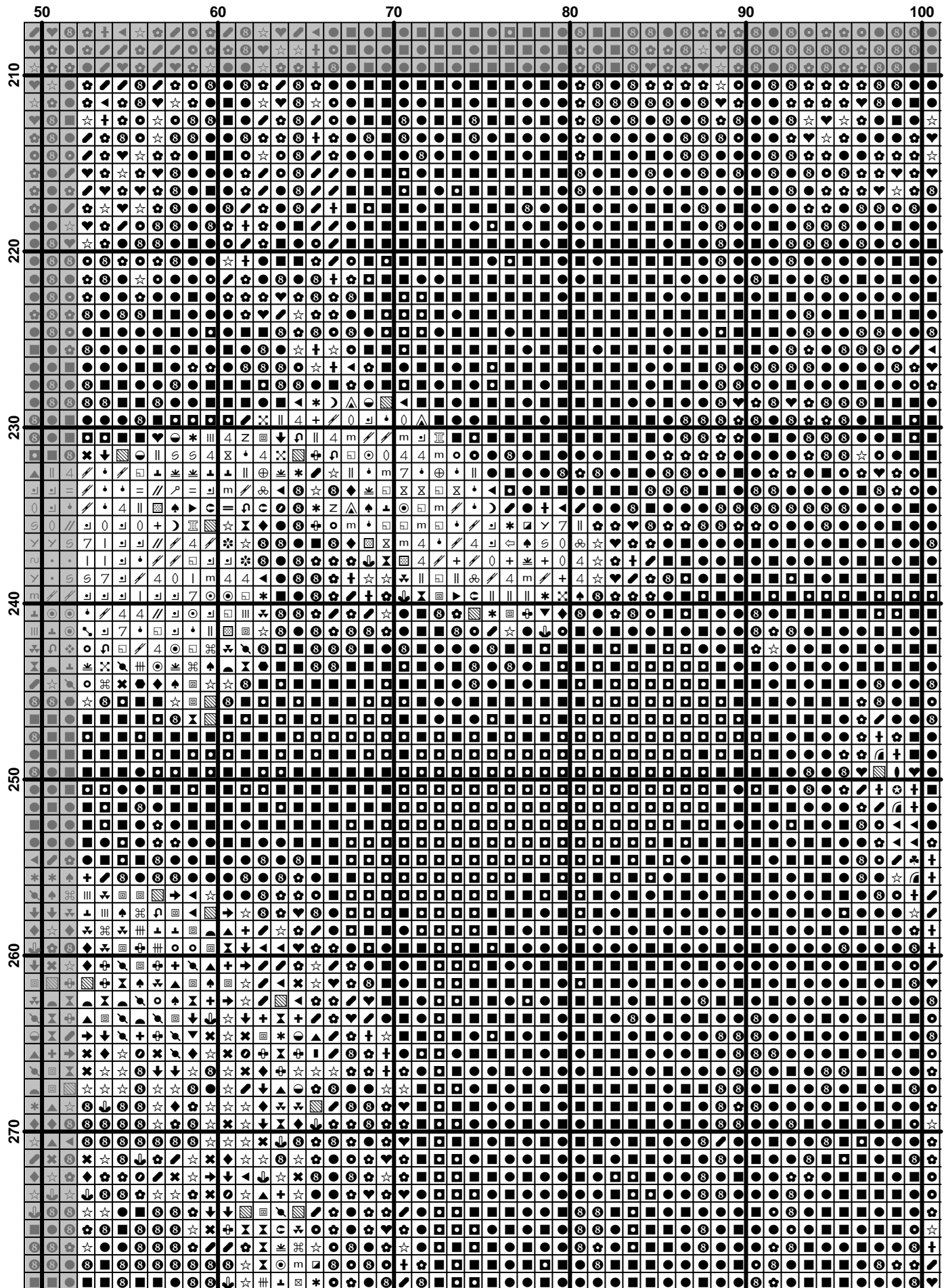








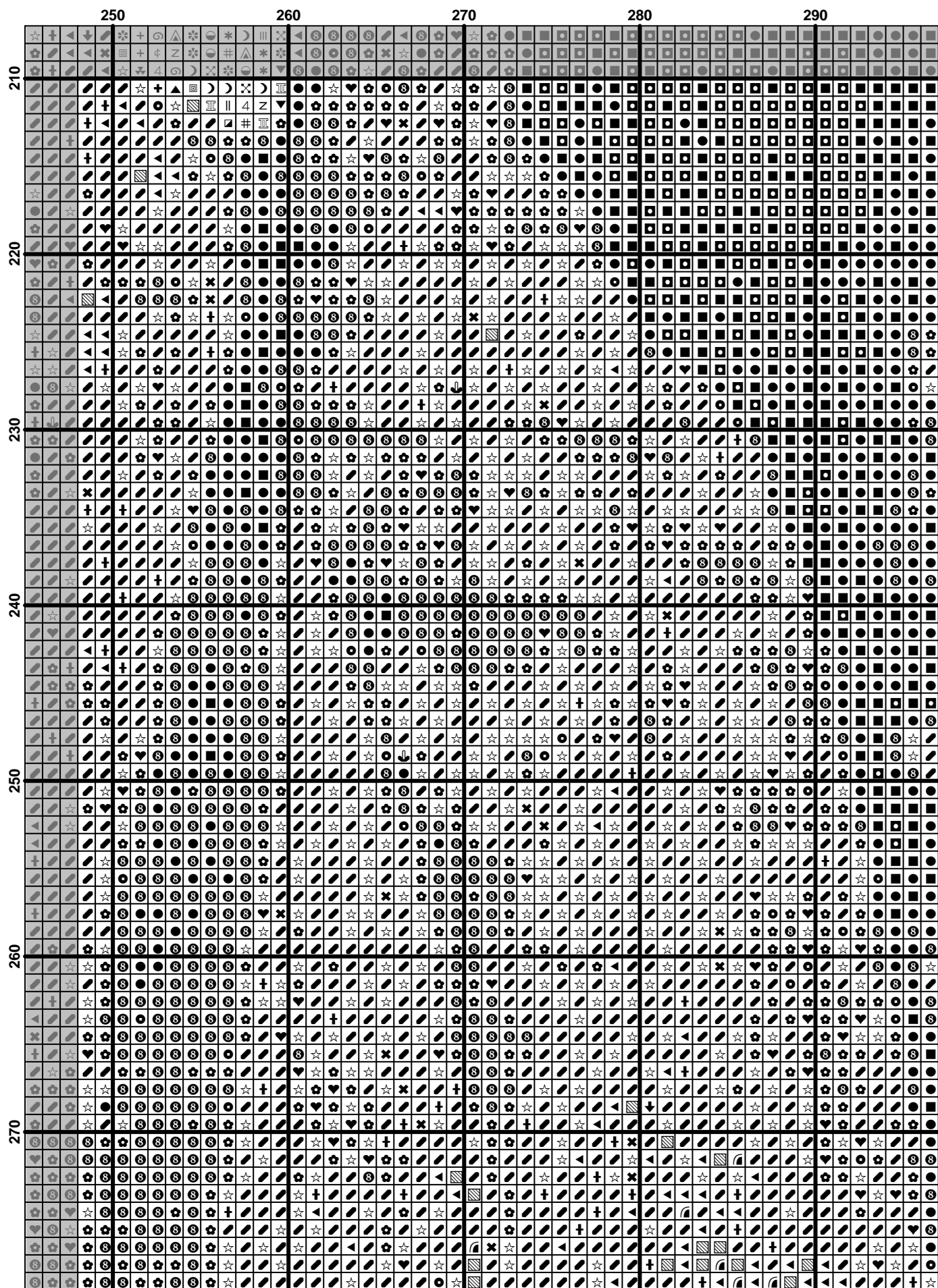
		10	20	30	40	50
210	✓)	φ	φ	φ	φ
211	✓)	φ	φ	φ	φ
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217	✓)	φ	φ	φ	φ
218	✓)	φ	φ	φ	φ
219	✓)	φ	φ	φ	φ
220	✓)	φ	φ	φ	φ
221	✓)	φ	φ	φ	φ
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298	✓)	φ	φ	φ	φ
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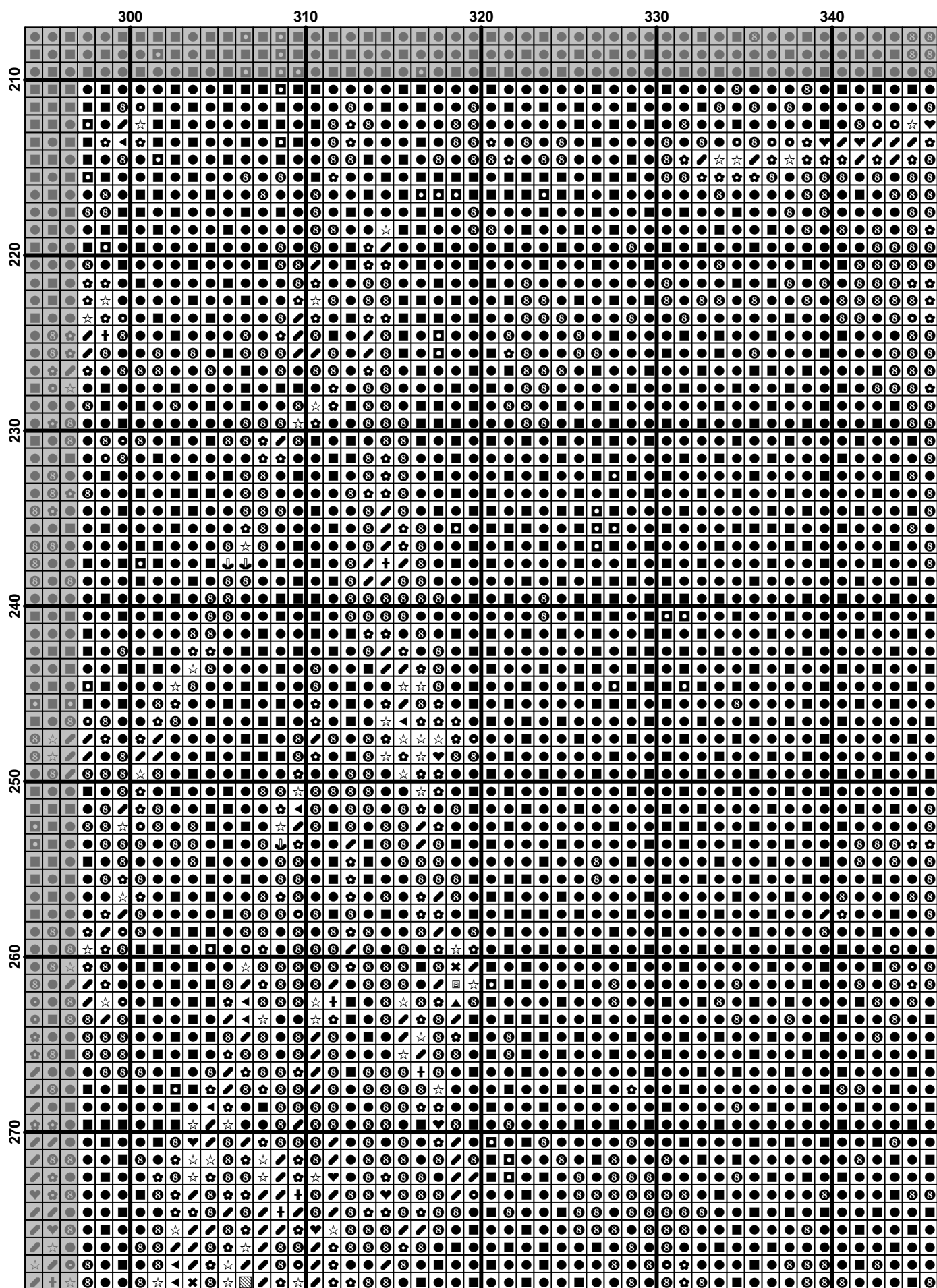


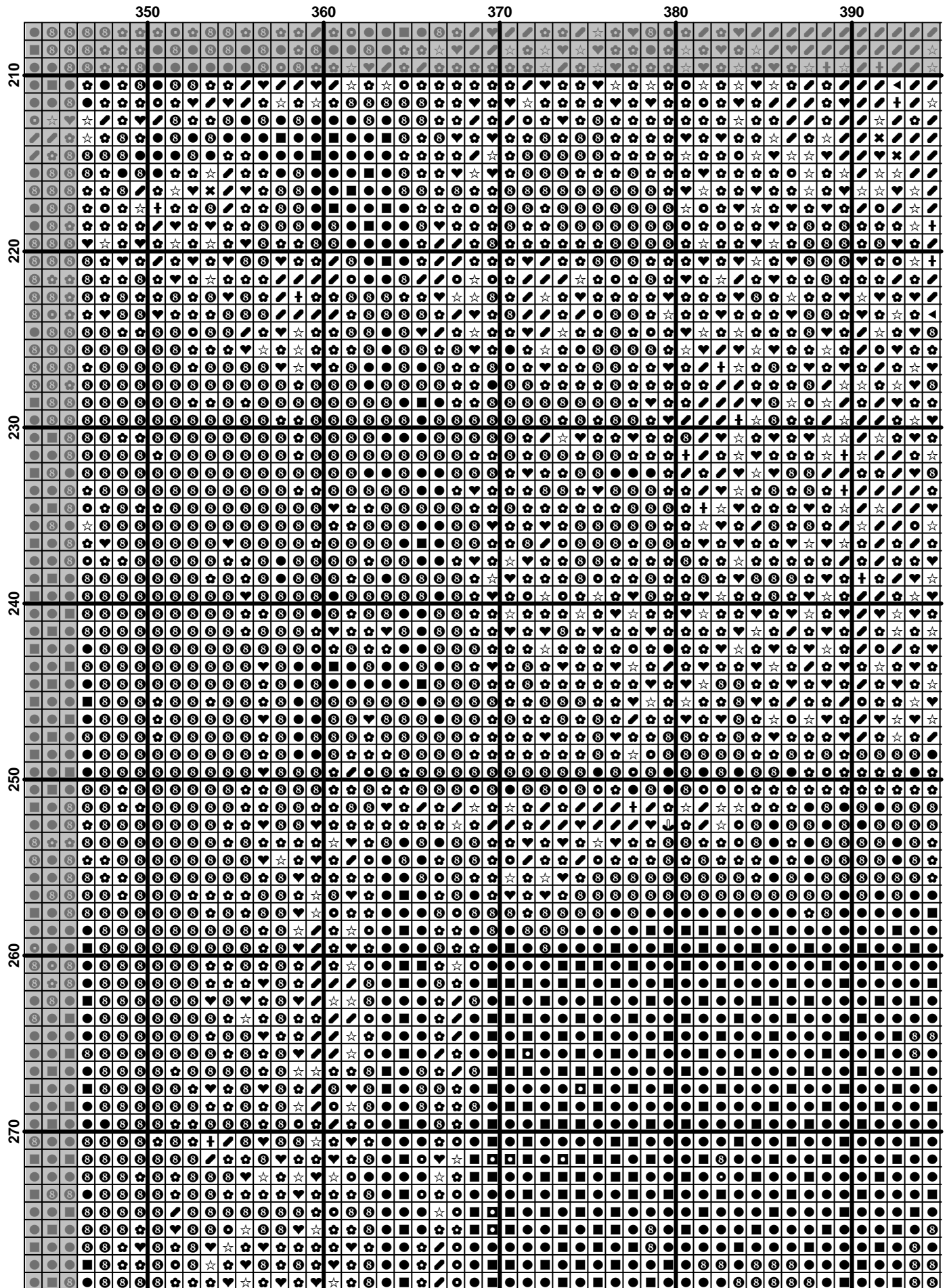
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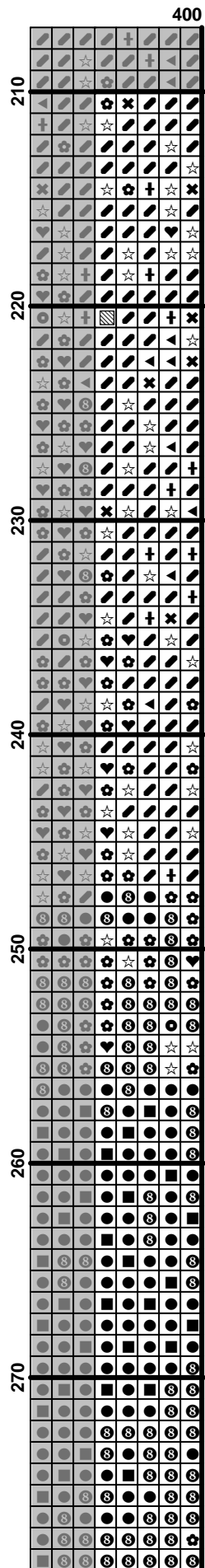
	150	160	170	180	190
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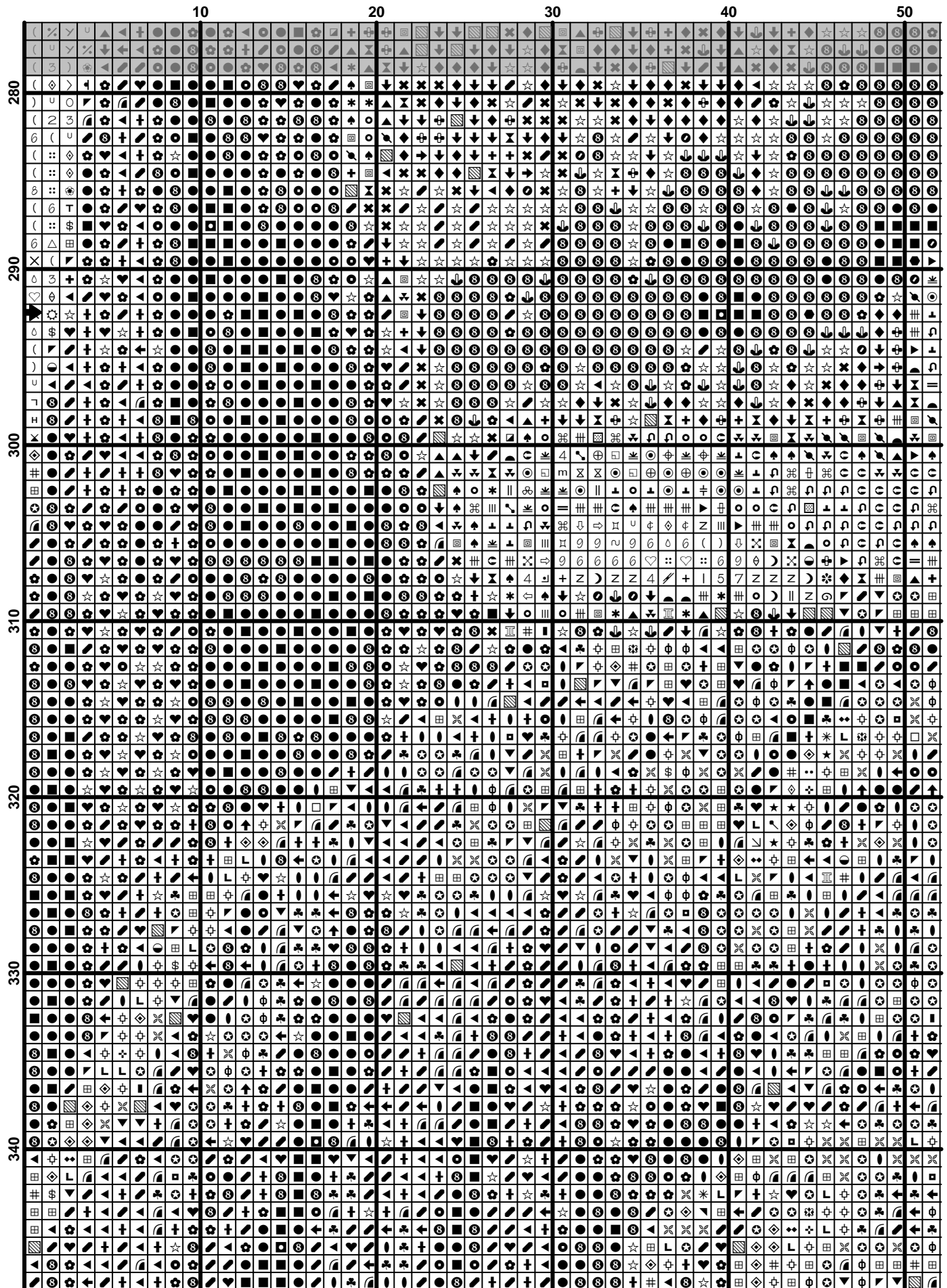
	200	210	220	230	240
210					
220					
230					
240					
250					
260					
270					

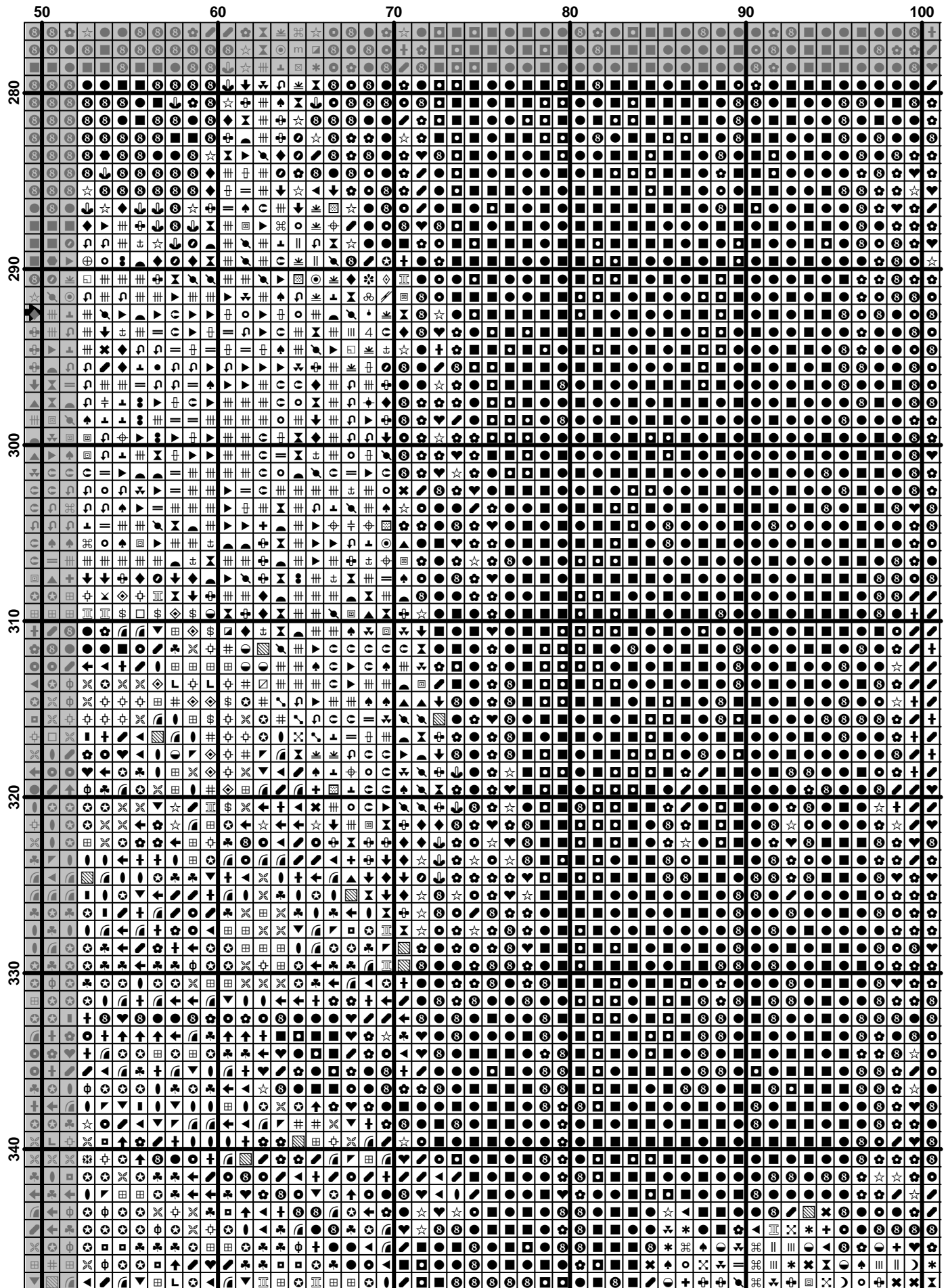






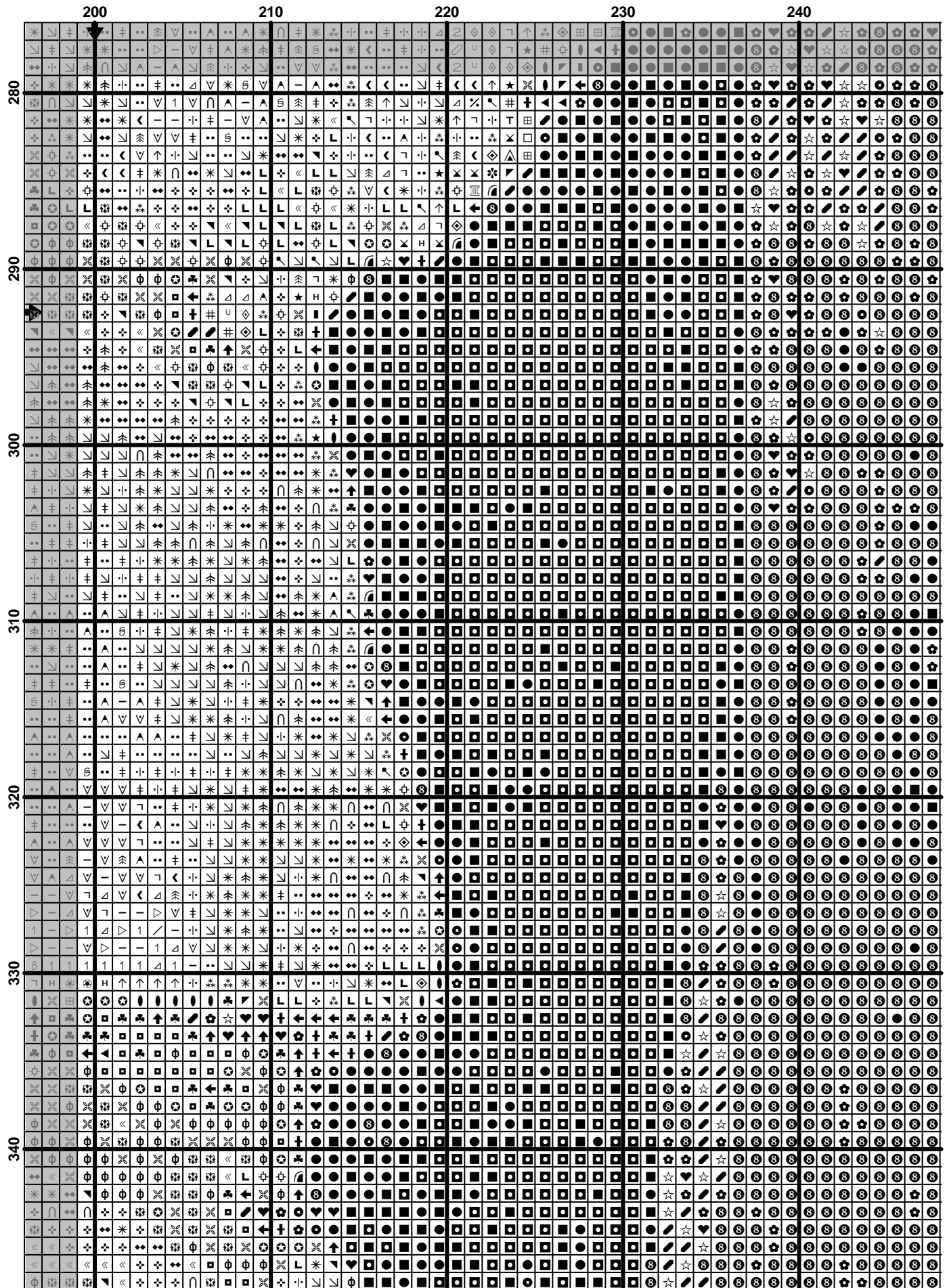


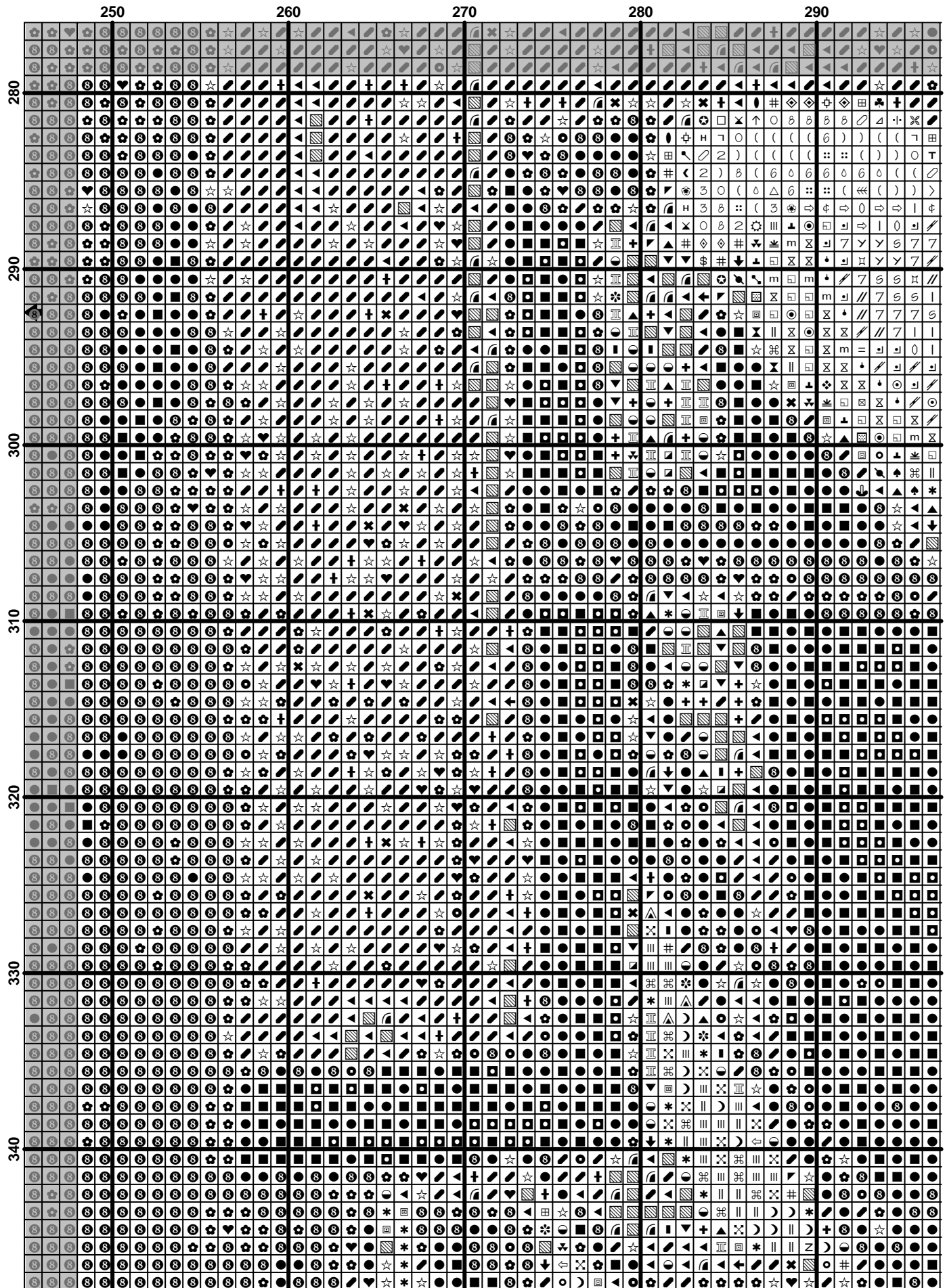


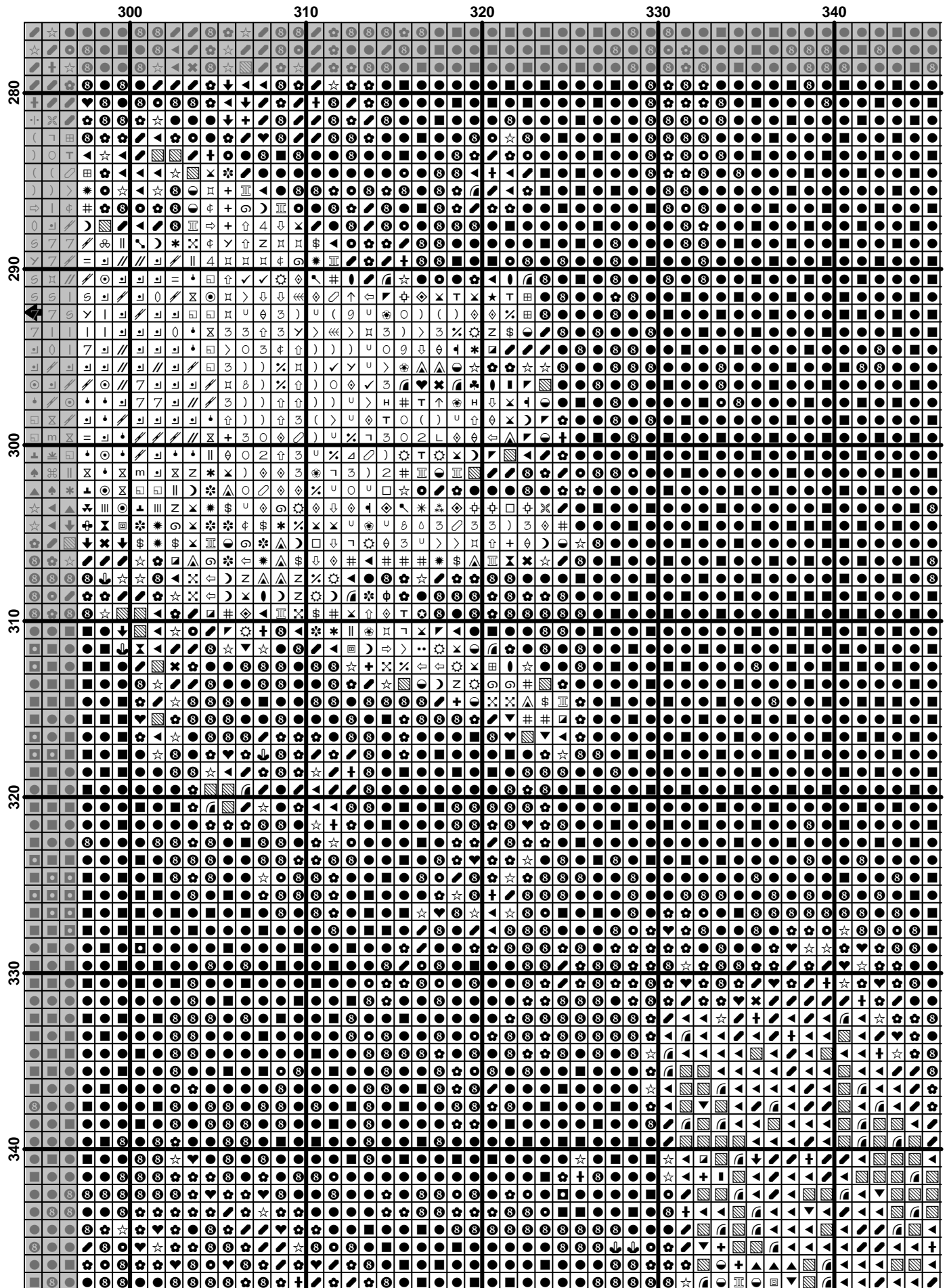


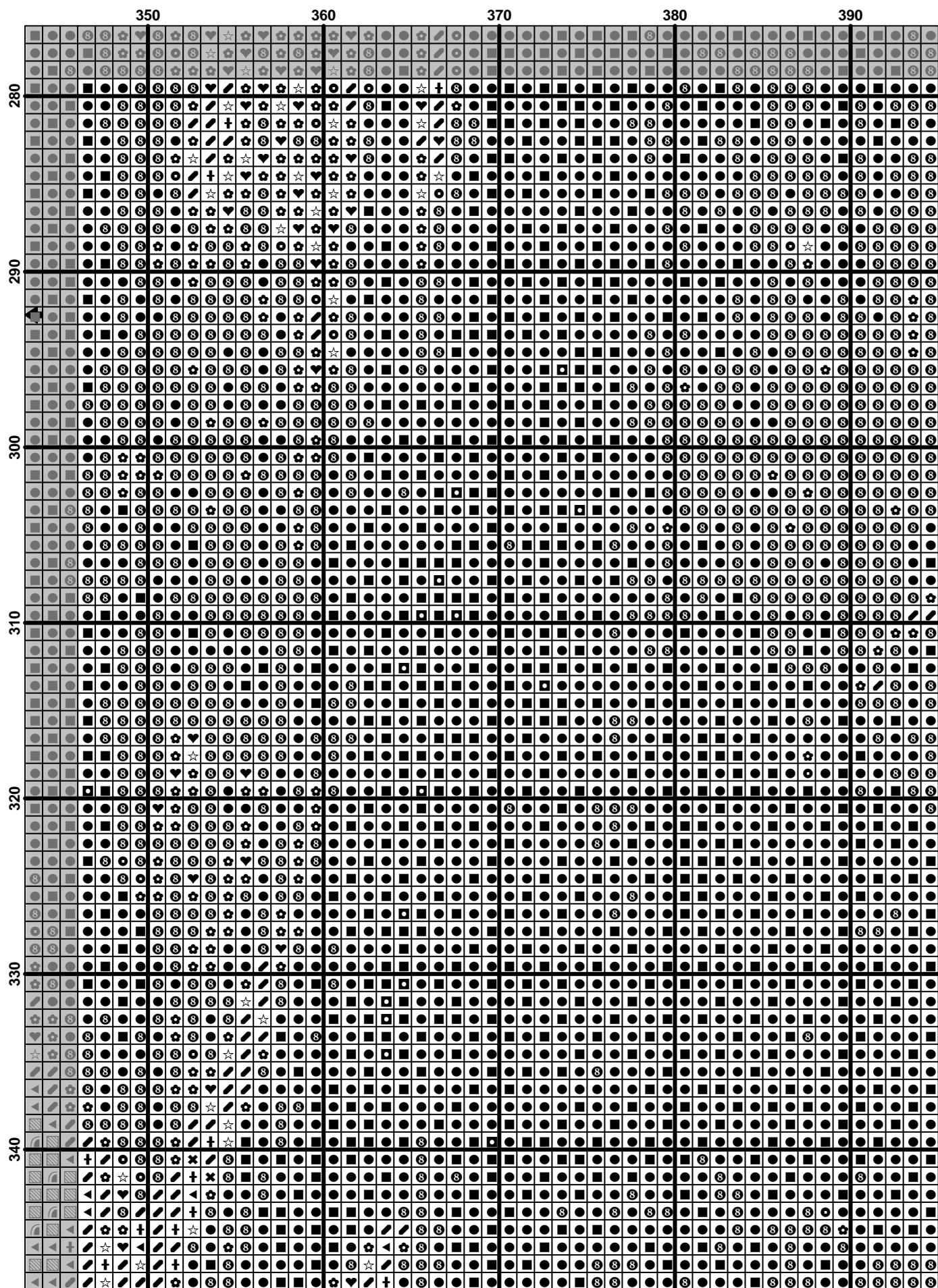
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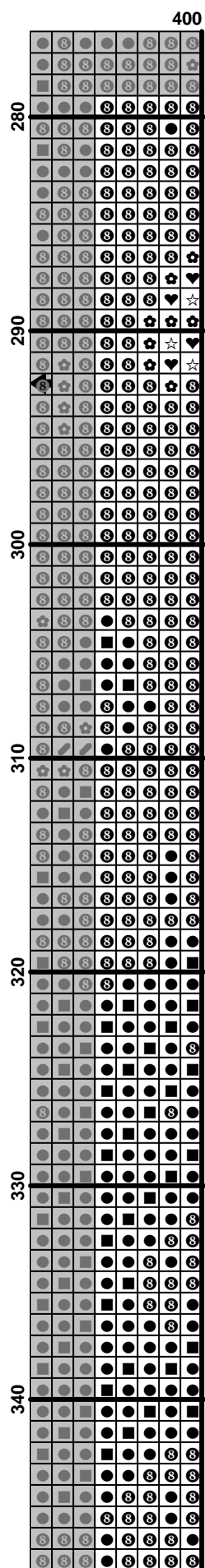
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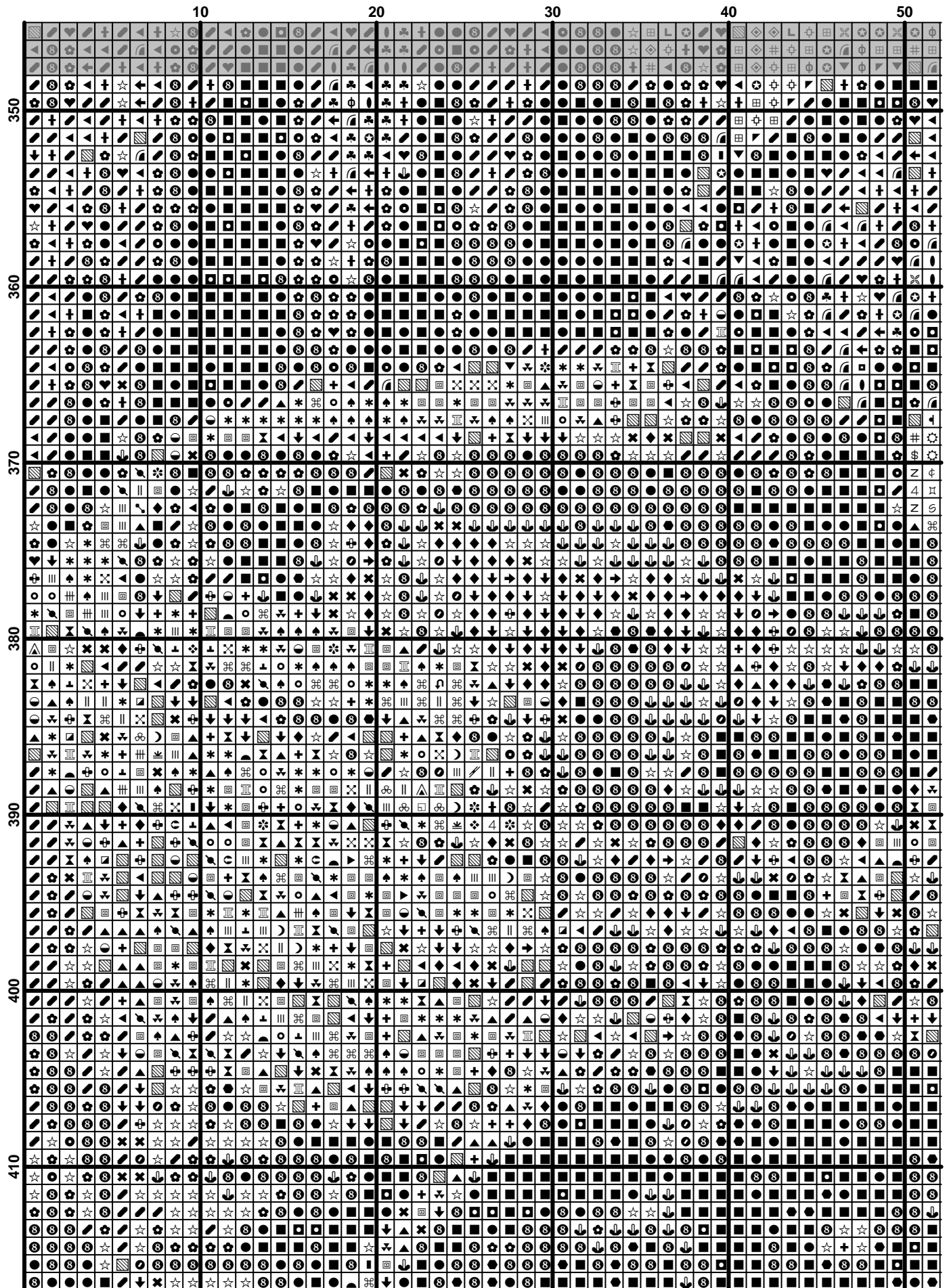


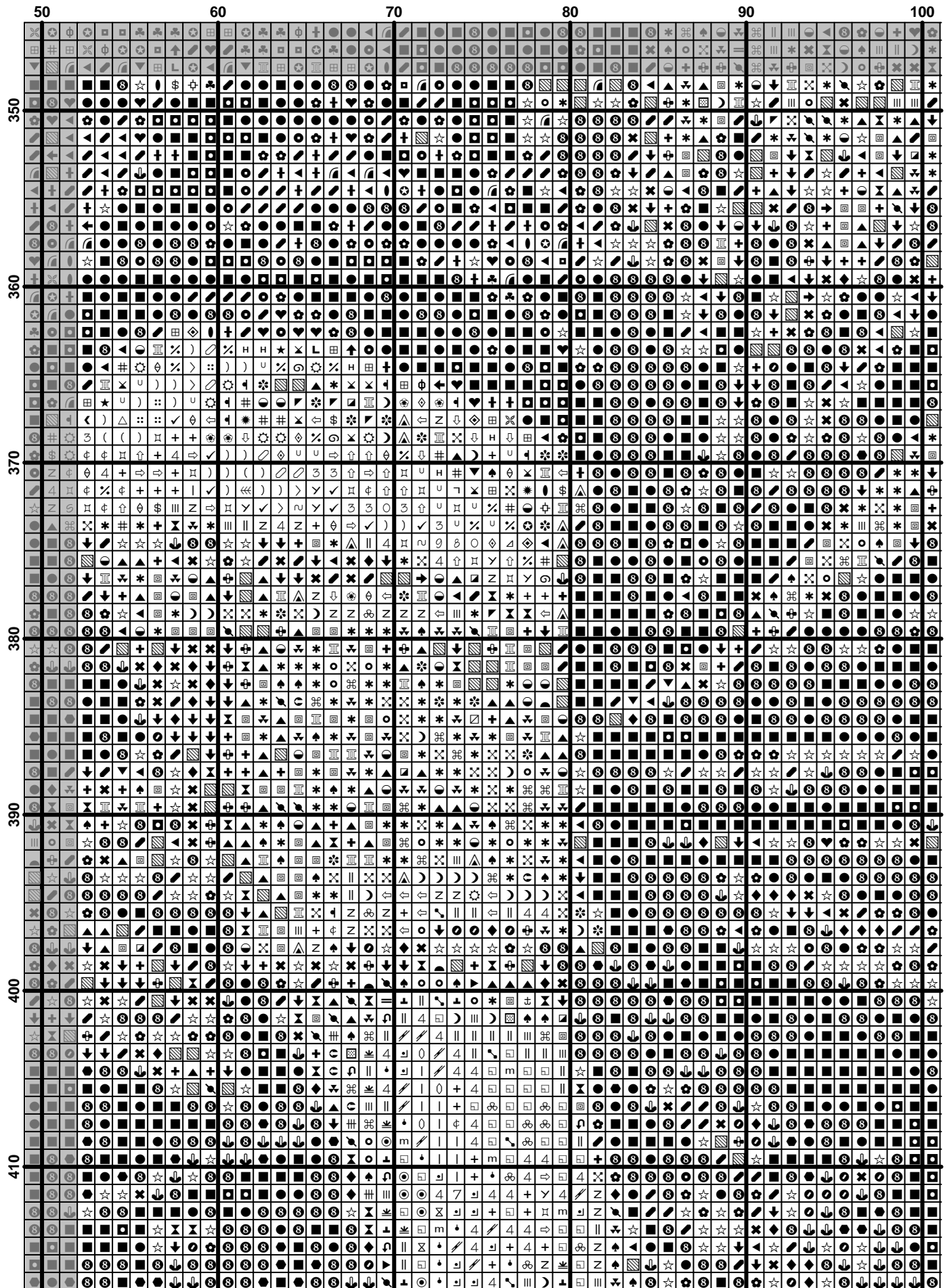


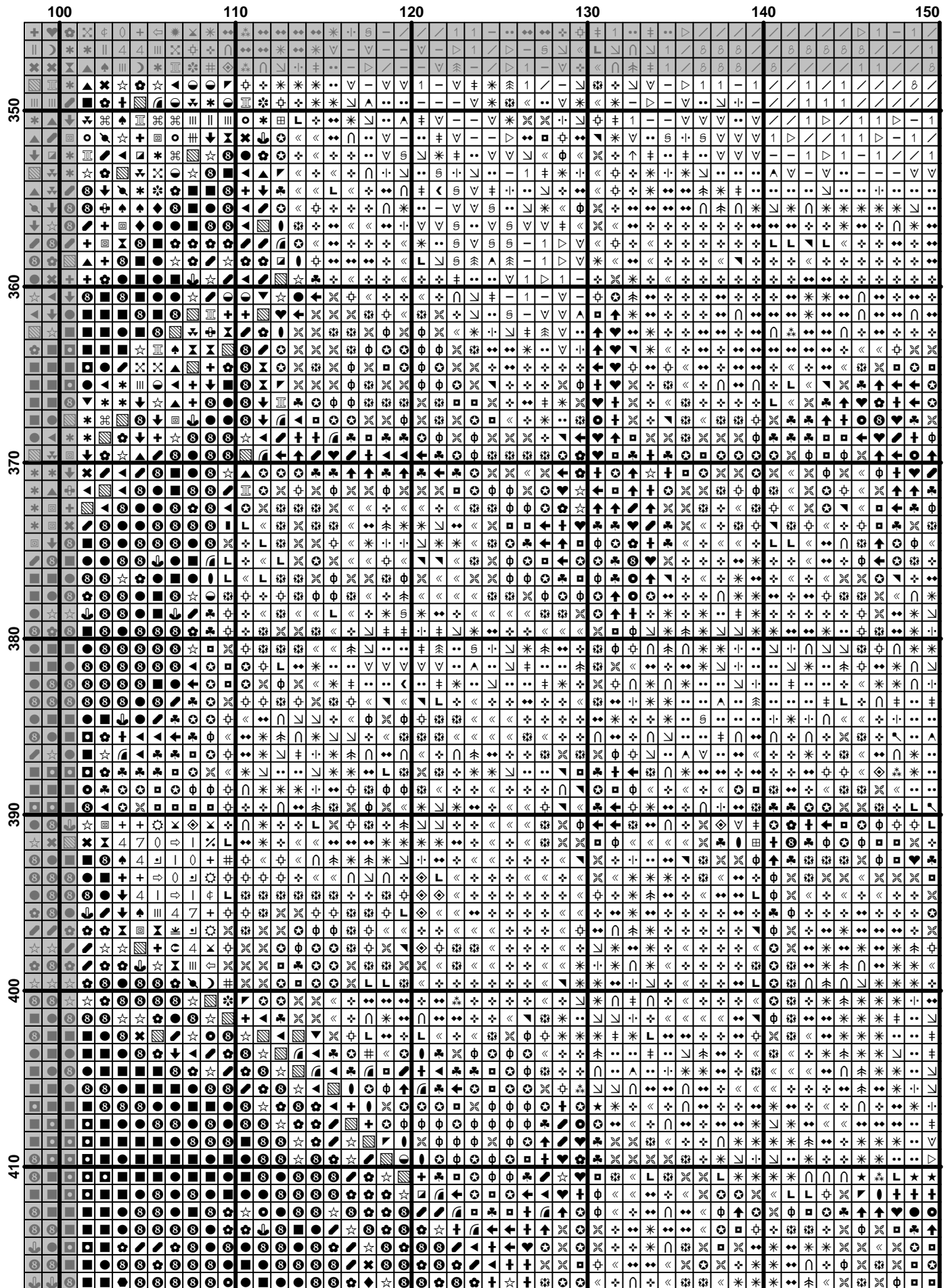












$$(58) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds$$

