



1526 Spray of Lilacs



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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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Spray of Lilacs																										
<table><tr><th colspan="2">Stitch Count</th></tr><tr><td>Horizontal:</td><td>300</td></tr><tr><td>Vertical:</td><td>221</td></tr></table>					Stitch Count		Horizontal:	300	Vertical:	221	<table><tr><th colspan="4">Recommended Fabric Color</th></tr><tr><td colspan="4">Antique White</td></tr></table>								Recommended Fabric Color				Antique White			
Stitch Count																										
Horizontal:	300																									
Vertical:	221																									
Recommended Fabric Color																										
Antique White																										
<p>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.</p> <p>The sizes are given for 14, 16 and 18 stitches per inch fabrics.</p> <p>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.</p>																										
	14				16				18																	
	Width		Height		Width		Height		Width		Height															
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch														
Pattern:	55	21.37	41	15.75	48	18.7	36	13.78	43	16.625	32	12.25														
Including Margins:	71	28	57	22	64	25	52	20	59	23	48	19														
	10				12				24																	
	Width		Height		Width		Height		Width		Height															
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch														
Pattern:	77	29.91	57	22.05	64	24.93	47	18.37	32	12.46	23	9.18														
Including Margins:	93	36	73	29	80	31	63	25	48	19	39	16														
	25				26				27																	
	Width		Height		Width		Height		Width		Height															
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch														
Pattern:	30	11.96	22	8.82	29	11.5	22	8.48	28	11.08	21	8.16														
Including Margins:	46	18	38	15	45	18	38	15	44	18	37	15														
	28				30				32																	
	Width		Height		Width		Height		Width		Height															
	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch	cm	inch														
Pattern:	27	10.68	20	7.87	25	9.97	19	7.35	24	9.34	17	6.89														
Including Margins:	43	17	36	14	41	16	35	14	40	16	33	13														

Solid Color Stitches. Use two strands of the specified color for these stitches.		
Symbol	DMC	Name
u	1	White 1
↘	209	Lavender-DK
↙	210	Lavender-MD
6	211	Lavender-LT
▲	317	Pewter Gray
✓	318	Steel Gray-LT
7	341	Blue Violet-LT
)	369	Pistachio Green-VY LT
✱	413	Pewter Gray-DK
⊕	414	Steel Gray-DK
∪	415	Pearl Gray
⊗	451	Shell Gray-DK
↔	453	Shell Gray-LT
✚	469	Avocado Green
×	470	Avocado Green-LT
◎	471	Avocado Green-VY LT
🌿	520	Fern Green-DK
τ	522	Fern Green
⊖	523	Fern Green-LT
· ·	524	Fern Green-VY LT
+	535	Ash Gray-VY LT
♡	543	Beige Brown-UL VY LT
н	554	Violet-LT
o	580	Moss Green-DK
z	581	Moss Green
β	613	Drab Brown-VY LT
∴	640	Beige Gray-VY DK
≡	642	Beige Gray-DK
α	644	Beige Gray-MD
⌘	645	Beaver Gray-VY DK
#	647	Beaver Gray-MD
3	648	Beaver Gray-LT
o	712	Cream
o	747	Sky Blue-VY LT
□	762	Pearl Gray-VY LT
·	772	Yellow Green-VY LT
↑	794	Cornflower Blue-LT
<	822	Beige Gray-LT
🏠	839	Beige Brown-DK
9	842	Beige Brown-VY LT
†	844	Beaver Brown-UL DK
✕	924	Gray Green--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
✱	3011	Khaki Green-DK
⋈	3012	Khaki Green-MD

⦿	3013	Khaki Green-LT
☯	3021	Brown Gray-VY DK
⦿	3022	Brown Gray-MD
⦿	3024	Brown Gray-VY LT
⦿	3041	Antique Violet-MD
⦿	3042	Antique Violet-LT
✱	3052	Green Gray-MD
▷	3072	Beaver Gray-VY LT
✱	3346	Hunter Green
☒	3348	Yellow Green-LT
⦿	3364	Pine Green
♠	3740	Antique Violet-DK
⦿	3743	Antique Violet-VY LT
+	3747	Blue Violet-VY LT
L	3753	Antique Blue-UL VY LT
~	3756	Baby Blue-UL VY LT
☼	3790	Beige Gray-UL DK
⦿	3799	Pewter Gray-VY DK
☾	3835	Grape-MD
⦿	3836	Grape-LT
♣	3860	Cocoa
⦿	3861	Cocoa-LT
1	3865	Winter White
(3866	Mocha Brown-UL VY LT

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

Symbol	DMC1	Name1	DMC2	Name2
5	210	Lavender-MD	211	Lavender-LT
4	210	Lavender-MD	3841	Baby Blue-Pale
⦿	211	Lavender-LT	775	Baby Blue-VY LT
⦿	211	Lavender-LT	3865	Winter White
●	310	Black	3781	Mocha Brown-DK
▷	316	Antique Mauve-MD	3041	Antique Violet-MD
☒	316	Antique Mauve-MD	3042	Antique Violet-LT
⦿	317	Pewter Gray	318	Steel Gray-LT
✱	317	Pewter Gray	926	Gray Green-MD
♠	317	Pewter Gray	3042	Antique Violet-LT
☒	318	Steel Gray-LT	414	Steel Gray-DK
✱	341	Blue Violet-LT	553	Violet
m	372	Mustard-LT	3348	Yellow Green-LT
⦿	407	Desert Sand-DK	452	Shell Gray-MD
^	407	Desert Sand-DK	3861	Cocoa-LT
⦿	413	Pewter Gray-DK	501	Blue Green-DK
✱	413	Pewter Gray-DK	502	Blue Green
☼	413	Pewter Gray-DK	839	Beige Brown-DK
↓	413	Pewter Gray-DK	934	Black Avocado Green
⦿	413	Pewter Gray-DK	3740	Antique Violet-DK
z	414	Steel Gray-DK	503	Blue Green-MD
⦿	414	Steel Gray-DK	3042	Antique Violet-LT
☒	415	Pearl Gray	554	Violet-LT
♠	415	Pearl Gray	932	Antique Blue-LT
⦿	415	Pearl Gray	3752	Antique Blue-VY LT
⦿	451	Shell Gray-DK	645	Beaver Gray-VY DK

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☼	451	Shell Gray-DK	3860	Cocoa
	451	Shell Gray-DK	3861	Cocoa-LT
	452	Shell Gray-MD	3727	Antique Mauve-LT
⌌	452	Shell Gray-MD	3861	Cocoa-LT
e	453	Shell Gray-LT	778	Antique Mauve-VY LT
⌌	453	Shell Gray-LT	3861	Cocoa-LT
☪	469	Avocado Green	937	Avocado Green-MD
♣	501	Blue Green-DK	924	Gray Green--VY DK
▲	502	Blue Green	645	Beaver Gray-VY DK
♣	503	Blue Green-MD	451	Shell Gray-DK
☪	503	Blue Green-MD	523	Fern Green-LT
⌌	520	Fern Green-DK	935	Avocado Green-DK
▲	520	Fern Green-DK	3362	Pine Green-DK
➔	520	Fern Green-DK	3799	Pewter Gray-VY DK
◀	522	Fern Green	926	Gray Green-MD
::	524	Fern Green-VY LT	3813	Blue Green-LT
△	543	Beige Brown-UL VY LT	778	Antique Mauve-VY LT
:	543	Beige Brown-UL VY LT	3689	Mauve-LT
♠	580	Moss Green-DK	581	Moss Green
■	580	Moss Green-DK	730	Olive Green-VY DK
◎	580	Moss Green-DK	906	Parrot Green-MD
▨	580	Moss Green-DK	936	Avocado Green-VY DK
▩	581	Moss Green	906	Parrot Green-MD
♠	581	Moss Green	936	Avocado Green-VY DK
//	581	Moss Green	3011	Khaki Green-DK
♠	581	Moss Green	3346	Hunter Green
▶	610	Drab Brown-DK	3362	Pine Green-DK
/	613	Drab Brown-VY LT	778	Antique Mauve-VY LT
★	640	Beige Gray-VY DK	645	Beaver Gray-VY DK
⌌	640	Beige Gray-VY DK	3861	Cocoa-LT
◇	644	Beige Gray-MD	648	Beaver Gray-LT
♠	645	Beaver Gray-VY DK	839	Beige Brown-DK
⌌	645	Beaver Gray-VY DK	3041	Antique Violet-MD
▼	730	Olive Green-VY DK	936	Avocado Green-VY DK
☪	730	Olive Green-VY DK	937	Avocado Green-MD
☆	738	Tan-VY LT	368	Pistachio Green-LT
	747	Sky Blue-VY LT	3841	Baby Blue-Pale
^	762	Pearl Gray-VY LT	3756	Baby Blue-UL VY LT
×	833	Golden Olive-LT	3364	Pine Green
♠	838	Beige Brown-VY DK	844	Beaver Brown-UL DK
♣	839	Beige Brown-DK	844	Beaver Brown-UL DK
◆	839	Beige Brown-DK	938	Coffee Brown-UL DK
■	839	Beige Brown-DK	3021	Brown Gray-VY DK
⊕	839	Beige Brown-DK	3787	Brown Gray-DK
▩	839	Beige Brown-DK	3860	Cocoa
⊕	840	Beige Brown-MD	3861	Cocoa-LT
?	842	Beige Brown-VY LT	452	Shell Gray-MD
▩	842	Beige Brown-VY LT	3727	Antique Mauve-LT
=	844	Beaver Brown-UL DK	3363	Pine Green-MD
▩	844	Beaver Brown-UL DK	3787	Brown Gray-DK
\$	926	Gray Green-MD	927	Gray Green-LT
L	926	Gray Green-MD	3041	Antique Violet-MD
■	935	Avocado Green-DK	310	Black
↑	935	Avocado Green-DK	936	Avocado Green-VY DK
●	936	Avocado Green-VY DK	937	Avocado Green-MD
▩	937	Avocado Green-MD	3787	Brown Gray-DK
♠	938	Coffee Brown-UL DK	3799	Pewter Gray-VY DK
◀	3011	Khaki Green-DK	3362	Pine Green-DK
♠	3021	Brown Gray-VY DK	934	Black Avocado Green

●	3021	Brown Gray-VY DK	3031	Mocha Brown-VY DK
⌘	3041	Antique Violet-MD	640	Beige Gray-VY DK
⌘	3041	Antique Violet-MD	3042	Antique Violet-LT
⌘	3041	Antique Violet-MD	3836	Grape-LT
—	3042	Antique Violet-LT	648	Beaver Gray-LT
∇	3042	Antique Violet-LT	927	Gray Green-LT
⋈	3042	Antique Violet-LT	932	Antique Blue-LT
	3042	Antique Violet-LT	3836	Grape-LT
↓	3051	Green Gray-DK	3781	Mocha Brown-DK
●	3346	Hunter Green	3362	Pine Green-DK
⌘	3347	Yellow Green-MD	3862	Mocha Beige-DK
▲	3362	Pine Green-DK	3052	Green Gray-MD
▲	3363	Pine Green-MD	645	Beaver Gray-VY DK
=	3743	Antique Violet-VY LT	762	Pearl Gray-VY LT
⋈	3752	Antique Blue-VY LT	3753	Antique Blue-UL VY LT
∞	3756	Baby Blue-UL VY LT	747	Sky Blue-VY LT
n	3756	Baby Blue-UL VY LT	819	Baby Pink-LT
«	3756	Baby Blue-UL VY LT	3865	Winter White
●	3787	Brown Gray-DK	3860	Cocoa
♦♦	3860	Cocoa	645	Beaver Gray-VY DK
○	3860	Cocoa	3861	Cocoa-LT
●	3861	Cocoa-LT	503	Blue Green-MD
○	3861	Cocoa-LT	3041	Antique Violet-MD

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	85	33	81	31	73	28
209	Lavender-DK	41	16	39	15	35	13
210	Lavender-MD	205	80	195	76	176	69
211	Lavender-LT	432	170	412	162	371	146
310	Black	165	64	157	61	141	55
316	Antique Mauve-MD	48	18	46	18	41	16
317	Pewter Gray	219	86	208	81	188	74
318	Steel Gray-LT	295	116	281	110	253	99
341	Blue Violet-LT	132	51	126	49	113	44
368	Pistachio Green-LT	8	3	7	2	7	2
369	Pistachio Green-VY LT	5	1	5	1	4	1
372	Mustard-LT	2	1	2	1	2	1
407	Desert Sand-DK	119	46	113	44	102	40
413	Pewter Gray-DK	254	100	242	95	217	85
414	Steel Gray-DK	350	137	333	131	300	118
415	Pearl Gray	415	163	395	155	355	139
451	Shell Gray-DK	282	111	268	105	241	94
452	Shell Gray-MD	545	214	519	204	467	183
453	Shell Gray-LT	350	137	333	131	300	118
469	Avocado Green	37	14	35	13	31	12
470	Avocado Green-LT	11	4	11	4	9	3
471	Avocado Green-VY LT	9	3	8	3	7	2
501	Blue Green-DK	56	22	54	21	48	18
502	Blue Green	120	47	114	44	103	40
503	Blue Green-MD	115	45	110	43	99	38
520	Fern Green-DK	498	196	474	186	426	167
522	Fern Green	85	33	81	31	73	28
523	Fern Green-LT	27	10	26	10	23	9
524	Fern Green-VY LT	41	16	39	15	35	13
535	Ash Gray-VY LT	138	54	131	51	118	46
543	Beige Brown-UL VY LT	183	72	174	68	156	61
553	Violet	25	9	24	9	22	8
554	Violet-LT	169	66	161	63	144	56
580	Moss Green-DK	162	63	154	60	139	54
581	Moss Green	138	54	131	51	118	46
610	Drab Brown-DK	16	6	16	6	14	5
613	Drab Brown-VY LT	70	27	67	26	60	23
640	Beige Gray-VY DK	108	42	102	40	92	36
642	Beige Gray-DK	29	11	28	11	25	9
644	Beige Gray-MD	19	7	18	7	16	6
645	Beaver Gray-VY DK	663	261	631	248	568	223
647	Beaver Gray-MD	61	24	58	22	52	20
648	Beaver Gray-LT	79	31	75	29	68	26
712	Cream	13	5	13	5	11	4
730	Olive Green-VY DK	63	24	60	23	54	21
738	Tan-VY LT	8	3	7	2	7	2
747	Sky Blue-VY LT	107	42	102	40	92	36
762	Pearl Gray-VY LT	151	59	144	56	130	51
772	Yellow Green-VY LT	9	3	8	3	7	2
775	Baby Blue-VY LT	133	52	126	49	114	44
778	Antique Mauve-VY LT	356	140	339	133	305	120
794	Cornflower Blue-LT	11	4	11	4	10	3
819	Baby Pink-LT	11	4	10	3	9	3

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822	Beige Gray-LT	4	1	4	1	3	1
833	Golden Olive-LT	3	1	3	1	3	1
838	Beige Brown-VY DK	59	23	57	22	51	20
839	Beige Brown-DK	489	192	466	183	419	164
840	Beige Brown-MD	8	3	7	2	7	2
842	Beige Brown-VY LT	439	172	418	164	376	148
844	Beaver Brown-UL DK	512	201	488	192	439	172
906	Parrot Green-MD	11	4	10	3	9	3
924	Gray Green--VY DK	52	20	50	19	45	17
926	Gray Green-MD	291	114	277	109	250	98
927	Gray Green-LT	184	72	175	68	157	61
928	Gray Green-VY LT	61	24	58	22	52	20
931	Antique Blue-MD	18	7	17	6	15	5
932	Antique Blue-LT	242	95	231	90	208	81
934	Black Avocado Green	189	74	180	70	162	63
935	Avocado Green-DK	435	171	414	162	372	146
936	Avocado Green-VY DK	391	153	373	146	335	131
937	Avocado Green-MD	242	95	231	90	208	81
938	Coffee Brown-UL DK	59	23	56	22	50	19
3011	Khaki Green-DK	80	31	76	29	68	26
3012	Khaki Green-MD	15	5	14	5	13	5
3013	Khaki Green-LT	6	2	5	1	5	1
3021	Brown Gray-VY DK	1284	505	1223	481	1101	433
3022	Brown Gray-MD	34	13	33	12	29	11
3024	Brown Gray-VY LT	52	20	49	19	44	17
3031	Mocha Brown-VY DK	396	155	377	148	339	133
3041	Antique Violet-MD	464	182	442	174	398	156
3042	Antique Violet-LT	466	183	444	174	400	157
3051	Green Gray-DK	63	24	60	23	54	21
3052	Green Gray-MD	115	45	110	43	99	38
3072	Beaver Gray-VY LT	37	14	35	13	32	12
3346	Hunter Green	49	19	47	18	42	16
3347	Yellow Green-MD	16	6	15	5	13	5
3348	Yellow Green-LT	8	3	8	3	7	2
3362	Pine Green-DK	261	102	249	98	224	88
3363	Pine Green-MD	204	80	195	76	175	68
3364	Pine Green	21	8	20	7	18	7
3689	Mauve-LT	48	18	46	18	41	16
3727	Antique Mauve-LT	309	121	294	115	265	104
3740	Antique Violet-DK	88	34	83	32	75	29
3743	Antique Violet-VY LT	164	64	156	61	141	55
3747	Blue Violet-VY LT	105	41	100	39	90	35
3752	Antique Blue-VY LT	101	39	96	37	86	33
3753	Antique Blue-UL VY LT	78	30	74	29	66	25
3756	Baby Blue-UL VY LT	268	105	255	100	229	90
3781	Mocha Brown-DK	175	68	166	65	150	59
3787	Brown Gray-DK	403	158	384	151	346	136
3790	Beige Gray-UL DK	16	6	16	6	14	5
3799	Pewter Gray-VY DK	243	95	232	91	208	81
3813	Blue Green-LT	16	6	15	5	13	5
3835	Grape-MD	29	11	27	10	25	9
3836	Grape-LT	124	48	118	46	106	41
3841	Baby Blue-Pale	118	46	113	44	101	39
3860	Cocoa	378	148	360	141	324	127
3861	Cocoa-LT	647	254	616	242	555	218
3862	Mocha Beige-DK	16	6	15	5	13	5
3865	Winter White	372	146	355	139	319	125
3866	Mocha Brown-UL VY LT	26	10	25	9	22	8

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		10		12		24	
1	White 1	131	50	110	42	55	21
209	Lavender-DK	63	23	53	20	26	10
210	Lavender-MD	317	124	264	104	132	52
211	Lavender-LT	668	263	557	219	278	110
310	Black	254	99	212	83	106	41
316	Antique Mauve-MD	74	29	62	24	31	12
317	Pewter Gray	338	133	282	111	141	56
318	Steel Gray-LT	455	178	380	149	190	74
341	Blue Violet-LT	203	79	170	66	85	33
368	Pistachio Green-LT	13	4	11	3	5	2
369	Pistachio Green-VY LT	7	2	6	2	3	1
372	Mustard-LT	4	2	3	2	2	1
407	Desert Sand-DK	184	72	153	60	77	30
413	Pewter Gray-DK	391	153	326	128	163	64
414	Steel Gray-DK	540	212	450	177	225	89
415	Pearl Gray	639	250	533	209	266	104
451	Shell Gray-DK	434	169	362	141	181	71
452	Shell Gray-MD	841	329	701	275	350	137
453	Shell Gray-LT	540	212	450	177	225	89
469	Avocado Green	56	22	47	18	23	9
470	Avocado Green-LT	16	5	14	5	7	2
471	Avocado Green-VY LT	13	4	11	3	5	2
501	Blue Green-DK	86	32	72	27	36	14
502	Blue Green	185	72	155	60	77	30
503	Blue Green-MD	178	68	149	57	74	29
520	Fern Green-DK	767	301	639	251	320	125
522	Fern Green	131	50	110	42	55	21
523	Fern Green-LT	41	16	35	14	17	7
524	Fern Green-VY LT	63	23	53	20	26	10
535	Ash Gray-VY LT	212	83	177	69	89	35
543	Beige Brown-UL VY LT	281	110	234	92	117	46
553	Violet	40	14	33	12	17	6
554	Violet-LT	259	101	216	84	108	42
580	Moss Green-DK	250	97	209	81	104	41
581	Moss Green	212	83	177	69	89	35
610	Drab Brown-DK	25	9	21	8	11	4
613	Drab Brown-VY LT	108	41	90	35	45	17
640	Beige Gray-VY DK	166	65	138	54	69	27
642	Beige Gray-DK	45	16	38	14	19	7
644	Beige Gray-MD	29	11	24	9	12	5
645	Beaver Gray-VY DK	1022	401	852	335	426	167
647	Beaver Gray-MD	94	36	78	30	39	15
648	Beaver Gray-LT	122	47	102	39	51	20
712	Cream	20	7	17	6	8	3
730	Olive Green-VY DK	97	38	81	32	41	16
738	Tan-VY LT	13	4	11	3	5	2
747	Sky Blue-VY LT	166	65	138	54	69	27
762	Pearl Gray-VY LT	234	92	195	77	98	38
772	Yellow Green-VY LT	13	4	11	3	5	2
775	Baby Blue-VY LT	205	79	171	66	86	33
778	Antique Mauve-VY LT	549	216	458	180	229	90
794	Cornflower Blue-LT	18	5	15	5	8	2
819	Baby Pink-LT	16	5	14	5	7	2

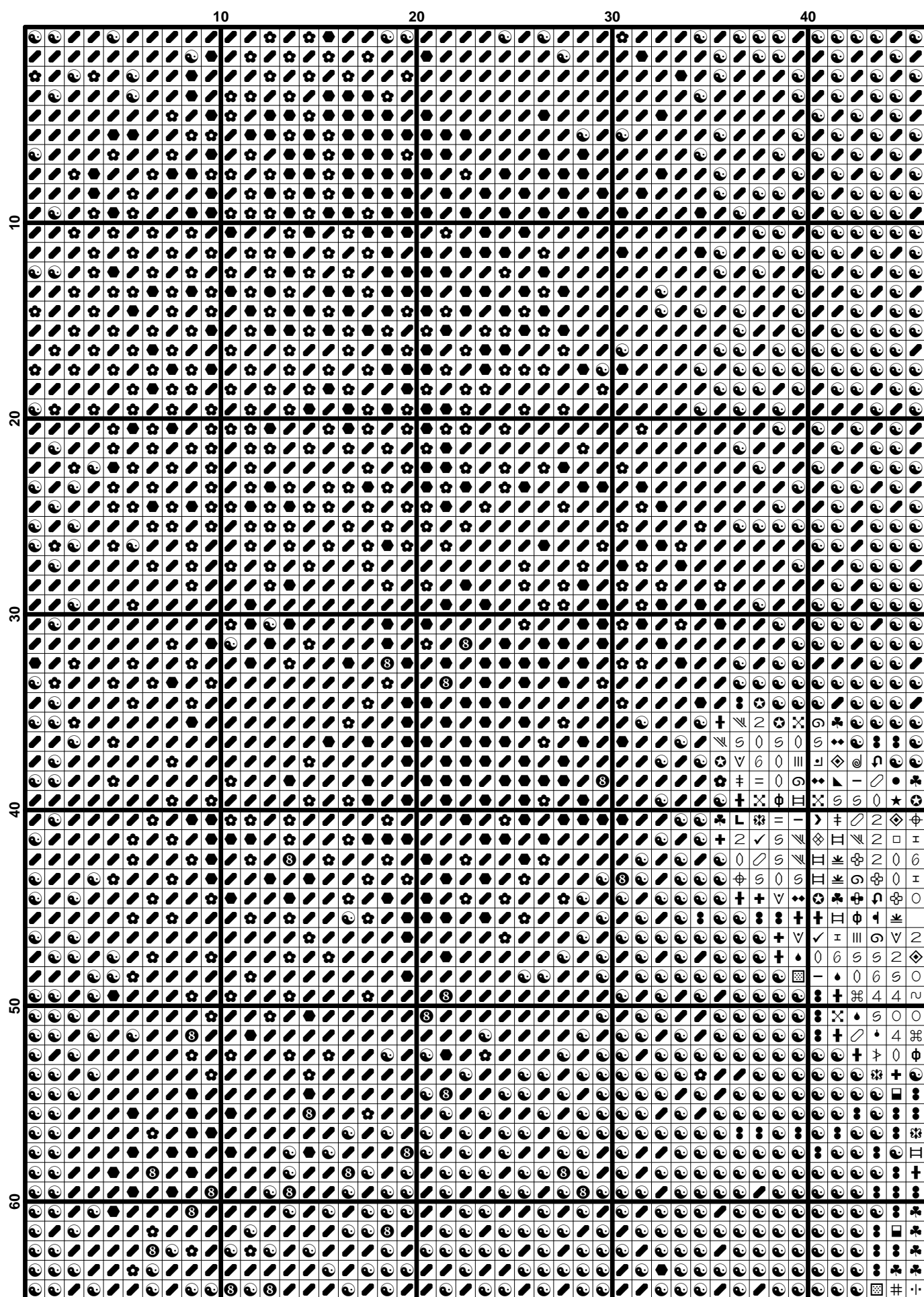
822	Beige Gray-LT	5	2	5	2	2	1
833	Golden Olive-LT	5	2	5	2	2	1
838	Beige Brown-VY DK	92	36	77	30	38	15
839	Beige Brown-DK	754	295	629	246	314	123
840	Beige Brown-MD	13	4	11	3	5	2
842	Beige Brown-VY LT	677	266	564	222	282	111
844	Beaver Brown-UL DK	790	310	659	258	329	129
906	Parrot Green-MD	16	5	14	5	7	2
924	Gray Green--VY DK	81	31	68	26	34	13
926	Gray Green-MD	450	176	375	147	188	74
927	Gray Green-LT	283	110	236	92	118	46
928	Gray Green-VY LT	94	36	78	30	39	15
931	Antique Blue-MD	27	9	23	8	11	4
932	Antique Blue-LT	374	146	312	122	156	61
934	Black Avocado Green	292	113	243	95	122	47
935	Avocado Green-DK	670	263	558	219	279	110
936	Avocado Green-VY DK	603	236	503	197	251	98
937	Avocado Green-MD	374	146	312	122	156	61
938	Coffee Brown-UL DK	90	34	75	29	38	14
3011	Khaki Green-DK	122	47	102	39	51	20
3012	Khaki Green-MD	23	9	20	8	10	4
3013	Khaki Green-LT	9	2	8	2	4	1
3021	Brown Gray-VY DK	1982	779	1652	650	826	325
3022	Brown Gray-MD	52	20	44	17	22	8
3024	Brown Gray-VY LT	79	31	66	26	33	13
3031	Mocha Brown-VY DK	610	239	509	200	254	100
3041	Antique Violet-MD	716	281	597	234	299	117
3042	Antique Violet-LT	720	283	600	236	300	118
3051	Green Gray-DK	97	38	81	32	41	16
3052	Green Gray-MD	178	68	149	57	74	29
3072	Beaver Gray-VY LT	58	22	48	18	24	9
3346	Hunter Green	76	29	63	24	32	12
3347	Yellow Green-MD	23	9	20	8	10	4
3348	Yellow Green-LT	13	4	11	3	5	2
3362	Pine Green-DK	403	158	336	132	168	66
3363	Pine Green-MD	315	122	263	102	131	51
3364	Pine Green	32	13	27	11	14	5
3689	Mauve-LT	74	29	62	24	31	12
3727	Antique Mauve-LT	477	187	398	156	199	78
3740	Antique Violet-DK	135	52	113	44	56	22
3743	Antique Violet-VY LT	254	99	212	83	106	41
3747	Blue Violet-VY LT	162	63	135	53	68	26
3752	Antique Blue-VY LT	155	59	129	50	65	25
3753	Antique Blue-UL VY LT	119	45	99	38	50	19
3756	Baby Blue-UL VY LT	412	162	344	135	172	68
3781	Mocha Brown-DK	270	106	225	89	113	44
3787	Brown Gray-DK	623	245	519	204	260	102
3790	Beige Gray-UL DK	25	9	21	8	11	4
3799	Pewter Gray-VY DK	374	146	312	122	156	61
3813	Blue Green-LT	23	9	20	8	10	4
3835	Grape-MD	45	16	38	14	19	7
3836	Grape-LT	191	74	159	62	80	31
3841	Baby Blue-Pale	182	70	152	59	76	29
3860	Cocoa	583	229	486	191	243	95
3861	Cocoa-LT	999	392	833	327	416	164
3862	Mocha Beige-DK	23	9	20	8	10	4
3865	Winter White	574	225	479	188	239	94
3866	Mocha Brown-UL VY LT	40	14	33	12	17	6

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		25		26		27	
1	White 1	53	20	51	19	49	19
209	Lavender-DK	25	9	24	9	23	9
210	Lavender-MD	127	50	122	48	117	46
211	Lavender-LT	267	105	257	101	247	97
310	Black	102	40	98	38	94	37
316	Antique Mauve-MD	30	12	28	11	27	11
317	Pewter Gray	135	53	130	51	125	49
318	Steel Gray-LT	182	71	175	69	169	66
341	Blue Violet-LT	81	32	78	30	75	29
368	Pistachio Green-LT	5	1	5	1	5	1
369	Pistachio Green-VY LT	3	1	3	1	3	1
372	Mustard-LT	1	1	1	1	1	1
407	Desert Sand-DK	73	29	71	28	68	27
413	Pewter Gray-DK	156	61	150	59	145	57
414	Steel Gray-DK	216	85	208	82	200	79
415	Pearl Gray	256	100	246	96	237	93
451	Shell Gray-DK	174	68	167	65	161	63
452	Shell Gray-MD	336	132	323	127	311	122
453	Shell Gray-LT	216	85	208	82	200	79
469	Avocado Green	22	9	21	8	21	8
470	Avocado Green-LT	6	2	6	2	6	2
471	Avocado Green-VY LT	5	1	5	1	5	1
501	Blue Green-DK	35	13	33	12	32	12
502	Blue Green	74	29	71	28	69	27
503	Blue Green-MD	71	27	69	26	66	25
520	Fern Green-DK	307	120	295	116	284	111
522	Fern Green	53	20	51	19	49	19
523	Fern Green-LT	17	6	16	6	15	6
524	Fern Green-VY LT	25	9	24	9	23	9
535	Ash Gray-VY LT	85	33	82	32	79	31
543	Beige Brown-UL VY LT	112	44	108	42	104	41
553	Violet	16	6	15	6	15	5
554	Violet-LT	104	40	100	39	96	37
580	Moss Green-DK	100	39	96	37	93	36
581	Moss Green	85	33	82	32	79	31
610	Drab Brown-DK	10	4	10	3	9	3
613	Drab Brown-VY LT	43	17	42	16	40	15
640	Beige Gray-VY DK	66	26	64	25	61	24
642	Beige Gray-DK	18	6	17	6	17	6
644	Beige Gray-MD	12	4	11	4	11	4
645	Beaver Gray-VY DK	409	161	393	154	379	149
647	Beaver Gray-MD	37	14	36	14	35	13
648	Beaver Gray-LT	49	19	47	18	45	17
712	Cream	8	3	8	3	7	3
730	Olive Green-VY DK	39	15	37	15	36	14
738	Tan-VY LT	5	1	5	1	5	1
747	Sky Blue-VY LT	66	26	64	25	61	24
762	Pearl Gray-VY LT	94	37	90	35	87	34
772	Yellow Green-VY LT	5	1	5	1	5	1
775	Baby Blue-VY LT	82	32	79	30	76	29
778	Antique Mauve-VY LT	220	86	211	83	203	80
794	Cornflower Blue-LT	7	2	7	2	7	2
819	Baby Pink-LT	6	2	6	2	6	2

822	Beige Gray-LT	2	1	2	1	2	1
833	Golden Olive-LT	2	1	2	1	2	1
838	Beige Brown-VY DK	37	14	35	14	34	13
839	Beige Brown-DK	302	118	290	114	279	109
840	Beige Brown-MD	5	1	5	1	5	1
842	Beige Brown-VY LT	271	107	260	102	251	99
844	Beaver Brown-UL DK	316	124	304	119	293	115
906	Parrot Green-MD	6	2	6	2	6	2
924	Gray Green--VY DK	32	12	31	12	30	11
926	Gray Green-MD	180	71	173	68	167	65
927	Gray Green-LT	113	44	109	42	105	41
928	Gray Green-VY LT	37	14	36	14	35	13
931	Antique Blue-MD	11	4	10	3	10	3
932	Antique Blue-LT	150	58	144	56	139	54
934	Black Avocado Green	117	45	112	44	108	42
935	Avocado Green-DK	268	105	258	101	248	97
936	Avocado Green-VY DK	241	94	232	91	223	87
937	Avocado Green-MD	150	58	144	56	139	54
938	Coffee Brown-UL DK	36	14	35	13	33	13
3011	Khaki Green-DK	49	19	47	18	45	17
3012	Khaki Green-MD	9	4	9	3	9	3
3013	Khaki Green-LT	4	1	3	1	3	1
3021	Brown Gray-VY DK	793	312	762	300	734	289
3022	Brown Gray-MD	21	8	20	8	19	7
3024	Brown Gray-VY LT	32	12	30	12	29	11
3031	Mocha Brown-VY DK	244	96	235	92	226	89
3041	Antique Violet-MD	287	112	276	108	265	104
3042	Antique Violet-LT	288	113	277	109	267	105
3051	Green Gray-DK	39	15	37	15	36	14
3052	Green Gray-MD	71	27	69	26	66	25
3072	Beaver Gray-VY LT	23	9	22	8	21	8
3346	Hunter Green	30	12	29	11	28	11
3347	Yellow Green-MD	9	4	9	3	9	3
3348	Yellow Green-LT	5	1	5	1	5	1
3362	Pine Green-DK	161	63	155	61	149	59
3363	Pine Green-MD	126	49	121	47	117	45
3364	Pine Green	13	5	12	5	12	5
3689	Mauve-LT	30	12	28	11	27	11
3727	Antique Mauve-LT	191	75	183	72	177	69
3740	Antique Violet-DK	54	21	52	20	50	19
3743	Antique Violet-VY LT	102	40	98	38	94	37
3747	Blue Violet-VY LT	65	25	62	24	60	23
3752	Antique Blue-VY LT	62	24	60	23	57	22
3753	Antique Blue-UL VY LT	48	18	46	17	44	17
3756	Baby Blue-UL VY LT	165	65	159	62	153	60
3781	Mocha Brown-DK	108	42	104	41	100	39
3787	Brown Gray-DK	249	98	240	94	231	91
3790	Beige Gray-UL DK	10	4	10	3	9	3
3799	Pewter Gray-VY DK	150	58	144	56	139	54
3813	Blue Green-LT	9	4	9	3	9	3
3835	Grape-MD	18	6	17	6	17	6
3836	Grape-LT	76	30	73	28	71	27
3841	Baby Blue-Pale	73	28	70	27	67	26
3860	Cocoa	233	91	224	88	216	85
3861	Cocoa-LT	400	157	384	151	370	145
3862	Mocha Beige-DK	9	4	9	3	9	3
3865	Winter White	230	90	221	87	213	83
3866	Mocha Brown-UL VY LT	16	6	15	6	15	5

Extended thread usage table.							
DMC	Name	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)	Usage (cm)	Usage (inch)
		28		30		32	
1	White 1	47	18	44	17	41	16
209	Lavender-DK	23	8	21	8	20	7
210	Lavender-MD	113	44	106	41	99	39
211	Lavender-LT	239	94	223	88	209	82
310	Black	91	35	85	33	79	31
316	Antique Mauve-MD	26	10	25	10	23	9
317	Pewter Gray	121	48	113	44	106	42
318	Steel Gray-LT	163	64	152	59	142	56
341	Blue Violet-LT	73	28	68	26	64	25
368	Pistachio Green-LT	5	1	4	1	4	1
369	Pistachio Green-VY LT	3	1	2	1	2	1
372	Mustard-LT	1	1	1	1	1	1
407	Desert Sand-DK	66	26	61	24	57	23
413	Pewter Gray-DK	140	55	130	51	122	48
414	Steel Gray-DK	193	76	180	71	169	66
415	Pearl Gray	228	89	213	83	200	78
451	Shell Gray-DK	155	60	145	56	136	53
452	Shell Gray-MD	300	118	280	110	263	103
453	Shell Gray-LT	193	76	180	71	169	66
469	Avocado Green	20	8	19	7	17	7
470	Avocado Green-LT	6	2	5	2	5	2
471	Avocado Green-VY LT	5	1	4	1	4	1
501	Blue Green-DK	31	12	29	11	27	10
502	Blue Green	66	26	62	24	58	23
503	Blue Green-MD	64	24	59	23	56	21
520	Fern Green-DK	274	107	256	100	240	94
522	Fern Green	47	18	44	17	41	16
523	Fern Green-LT	15	6	14	5	13	5
524	Fern Green-VY LT	23	8	21	8	20	7
535	Ash Gray-VY LT	76	30	71	28	66	26
543	Beige Brown-UL VY LT	100	39	94	37	88	34
553	Violet	14	5	13	5	12	5
554	Violet-LT	93	36	86	34	81	32
580	Moss Green-DK	89	35	83	32	78	30
581	Moss Green	76	30	71	28	66	26
610	Drab Brown-DK	9	3	8	3	8	3
613	Drab Brown-VY LT	39	15	36	14	34	13
640	Beige Gray-VY DK	59	23	55	22	52	20
642	Beige Gray-DK	16	6	15	5	14	5
644	Beige Gray-MD	10	4	10	4	9	3
645	Beaver Gray-VY DK	365	143	341	134	320	125
647	Beaver Gray-MD	33	13	31	12	29	11
648	Beaver Gray-LT	44	17	41	16	38	15
712	Cream	7	3	7	2	6	2
730	Olive Green-VY DK	35	14	32	13	30	12
738	Tan-VY LT	5	1	4	1	4	1
747	Sky Blue-VY LT	59	23	55	22	52	20
762	Pearl Gray-VY LT	84	33	78	31	73	29
772	Yellow Green-VY LT	5	1	4	1	4	1
775	Baby Blue-VY LT	73	28	68	26	64	25
778	Antique Mauve-VY LT	196	77	183	72	172	68
794	Cornflower Blue-LT	6	2	6	2	6	2
819	Baby Pink-LT	6	2	5	2	5	2

822	Beige Gray-LT	2	1	2	1	2	1
833	Golden Olive-LT	2	1	2	1	2	1
838	Beige Brown-VY DK	33	13	31	12	29	11
839	Beige Brown-DK	269	105	251	98	236	92
840	Beige Brown-MD	5	1	4	1	4	1
842	Beige Brown-VY LT	242	95	226	89	212	83
844	Beaver Brown-UL DK	282	111	263	103	247	97
906	Parrot Green-MD	6	2	5	2	5	2
924	Gray Green--VY DK	29	11	27	10	25	10
926	Gray Green-MD	161	63	150	59	141	55
927	Gray Green-LT	101	39	94	37	88	34
928	Gray Green-VY LT	33	13	31	12	29	11
931	Antique Blue-MD	10	3	9	3	8	3
932	Antique Blue-LT	134	52	125	49	117	46
934	Black Avocado Green	104	41	97	38	91	35
935	Avocado Green-DK	239	94	223	88	209	82
936	Avocado Green-VY DK	215	84	201	79	188	74
937	Avocado Green-MD	134	52	125	49	117	46
938	Coffee Brown-UL DK	32	12	30	11	28	11
3011	Khaki Green-DK	44	17	41	16	38	15
3012	Khaki Green-MD	8	3	8	3	7	3
3013	Khaki Green-LT	3	1	3	1	3	1
3021	Brown Gray-VY DK	708	278	661	260	619	244
3022	Brown Gray-MD	19	7	17	7	16	6
3024	Brown Gray-VY LT	28	11	26	10	25	10
3031	Mocha Brown-VY DK	218	86	203	80	191	75
3041	Antique Violet-MD	256	100	239	94	224	88
3042	Antique Violet-LT	257	101	240	94	225	88
3051	Green Gray-DK	35	14	32	13	30	12
3052	Green Gray-MD	64	24	59	23	56	21
3072	Beaver Gray-VY LT	21	8	19	7	18	7
3346	Hunter Green	27	10	25	10	24	9
3347	Yellow Green-MD	8	3	8	3	7	3
3348	Yellow Green-LT	5	1	4	1	4	1
3362	Pine Green-DK	144	57	134	53	126	50
3363	Pine Green-MD	113	44	105	41	98	38
3364	Pine Green	12	5	11	4	10	4
3689	Mauve-LT	26	10	25	10	23	9
3727	Antique Mauve-LT	170	67	159	62	149	59
3740	Antique Violet-DK	48	19	45	17	42	16
3743	Antique Violet-VY LT	91	35	85	33	79	31
3747	Blue Violet-VY LT	58	23	54	21	51	20
3752	Antique Blue-VY LT	55	21	52	20	48	19
3753	Antique Blue-UL VY LT	42	16	40	15	37	14
3756	Baby Blue-UL VY LT	147	58	137	54	129	51
3781	Mocha Brown-DK	96	38	90	35	84	33
3787	Brown Gray-DK	222	87	208	82	195	77
3790	Beige Gray-UL DK	9	3	8	3	8	3
3799	Pewter Gray-VY DK	134	52	125	49	117	46
3813	Blue Green-LT	8	3	8	3	7	3
3835	Grape-MD	16	6	15	5	14	5
3836	Grape-LT	68	26	64	25	60	23
3841	Baby Blue-Pale	65	25	61	23	57	22
3860	Cocoa	208	82	194	76	182	71
3861	Cocoa-LT	357	140	333	131	312	123
3862	Mocha Beige-DK	8	3	8	3	7	3
3865	Winter White	205	80	191	75	179	70
3866	Mocha Brown-UL VY LT	14	5	13	5	12	5



	50	60	70	80
10				
20				
30				
40				
50				
60				

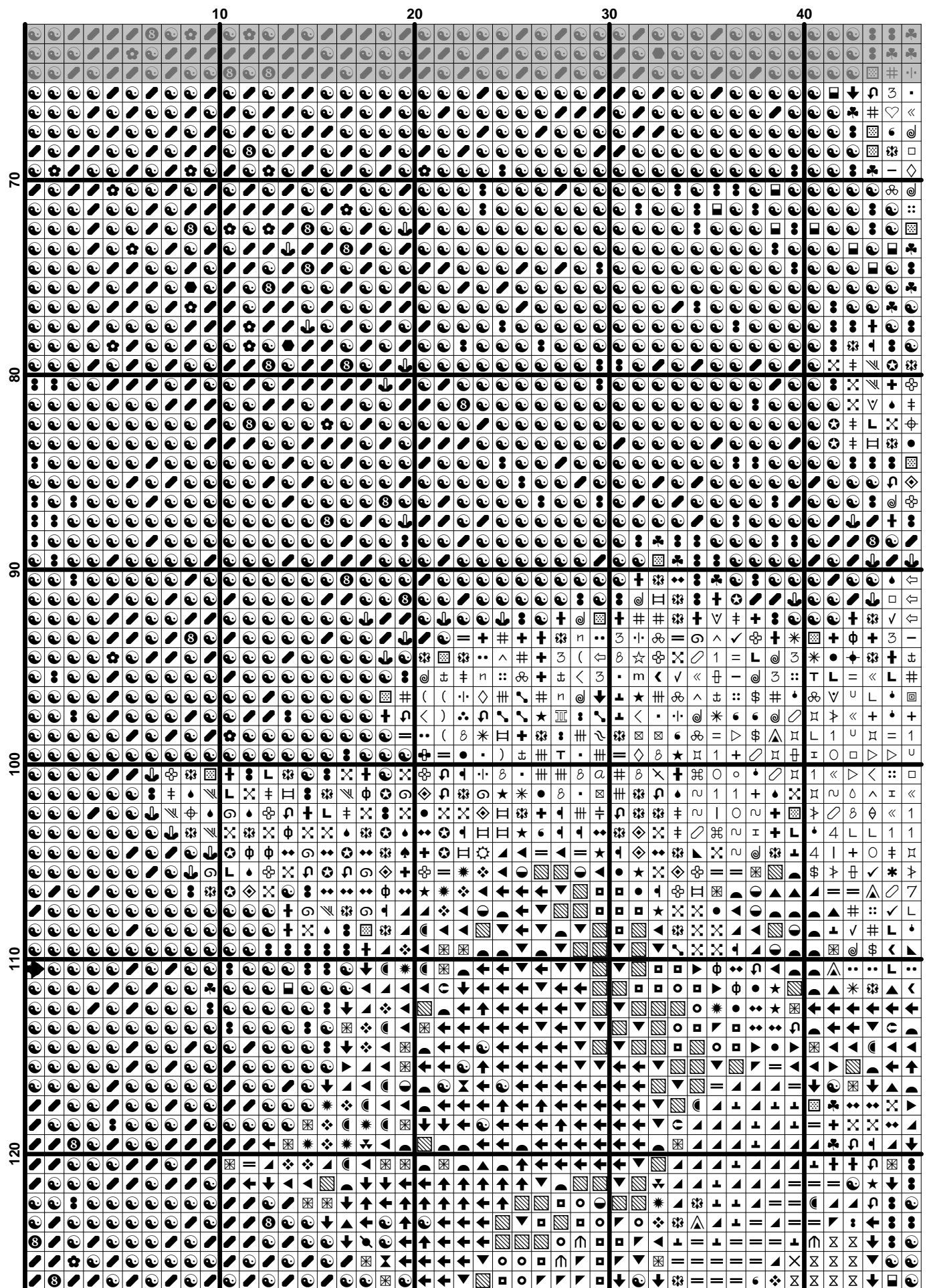
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410	+	+	+	+	+
420	+	+	+	+	+
430	+	+	+	+	+
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850	+	+	+	+	+
860	+	+	+	+	+
870	+	+	+	+	+
880	+	+	+	+	+
890	+	+	+	+	+
900	+	+	+	+	+
910	+	+	+	+	+
920	+	+	+	+	+
930	+	+	+	+	+
940	+	+	+	+	+
950	+	+	+	+	+
960	+	+	+	+	+
970	+	+	+	+	+
980	+	+	+	+	+
990	+	+	+	+	+
1000	+	+	+	+	+

	130	140	150	160	170
10					
20					
30					
40					
50					
60					

$$(12) \quad \mathcal{L}(\mathcal{A}) = \mathcal{L}(\mathcal{B}) \quad (13)$$

$$(13) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} g(s) ds + \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} h(s) ds$$

(14)



	50	60	70	80
70				
80				
90				
100				
110				
120				

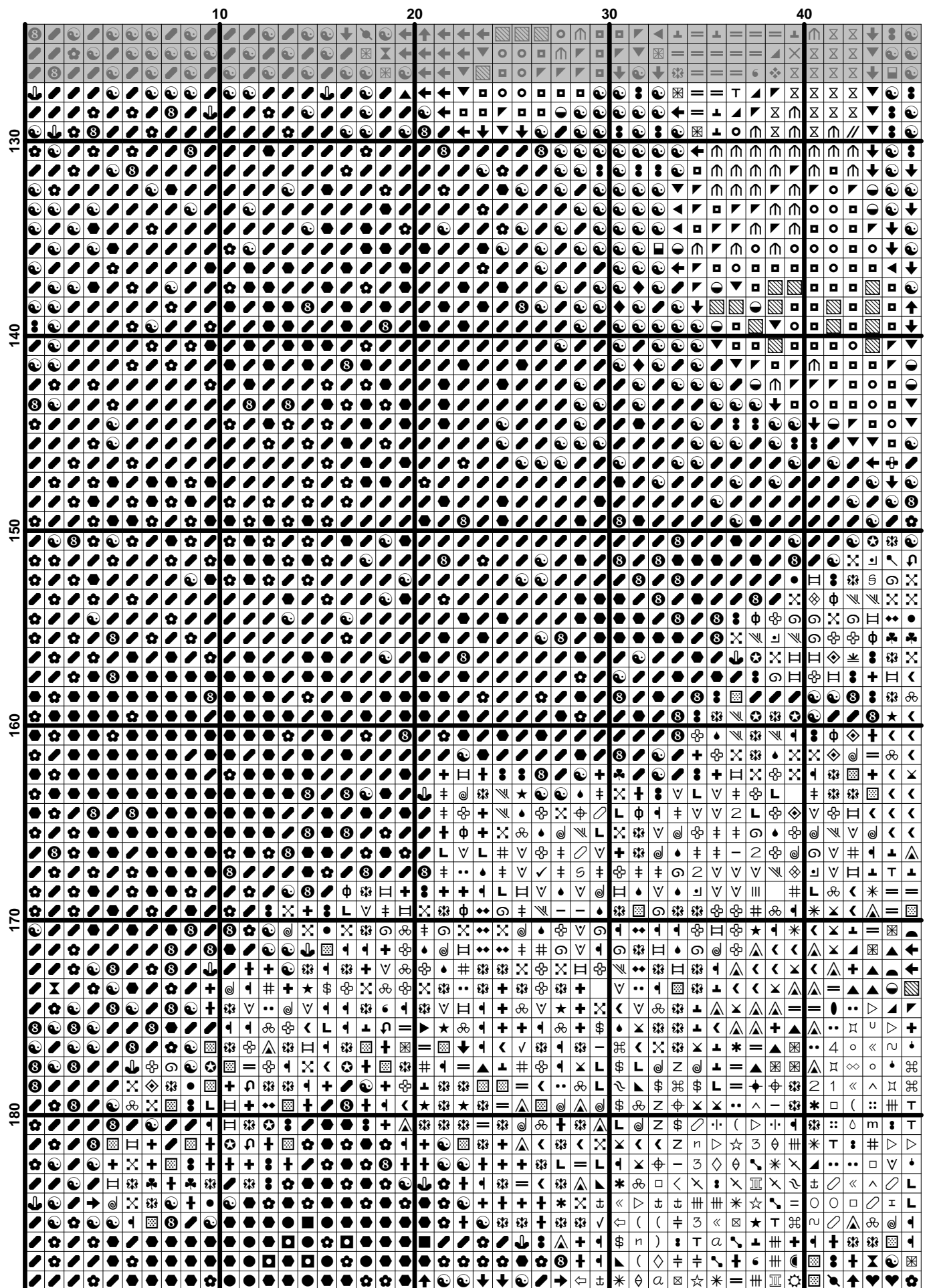
(18)

	130	140	150	160	170
70					
80					
90					
100					
110					
120					

[illegible]

(21)

(21)



(24)

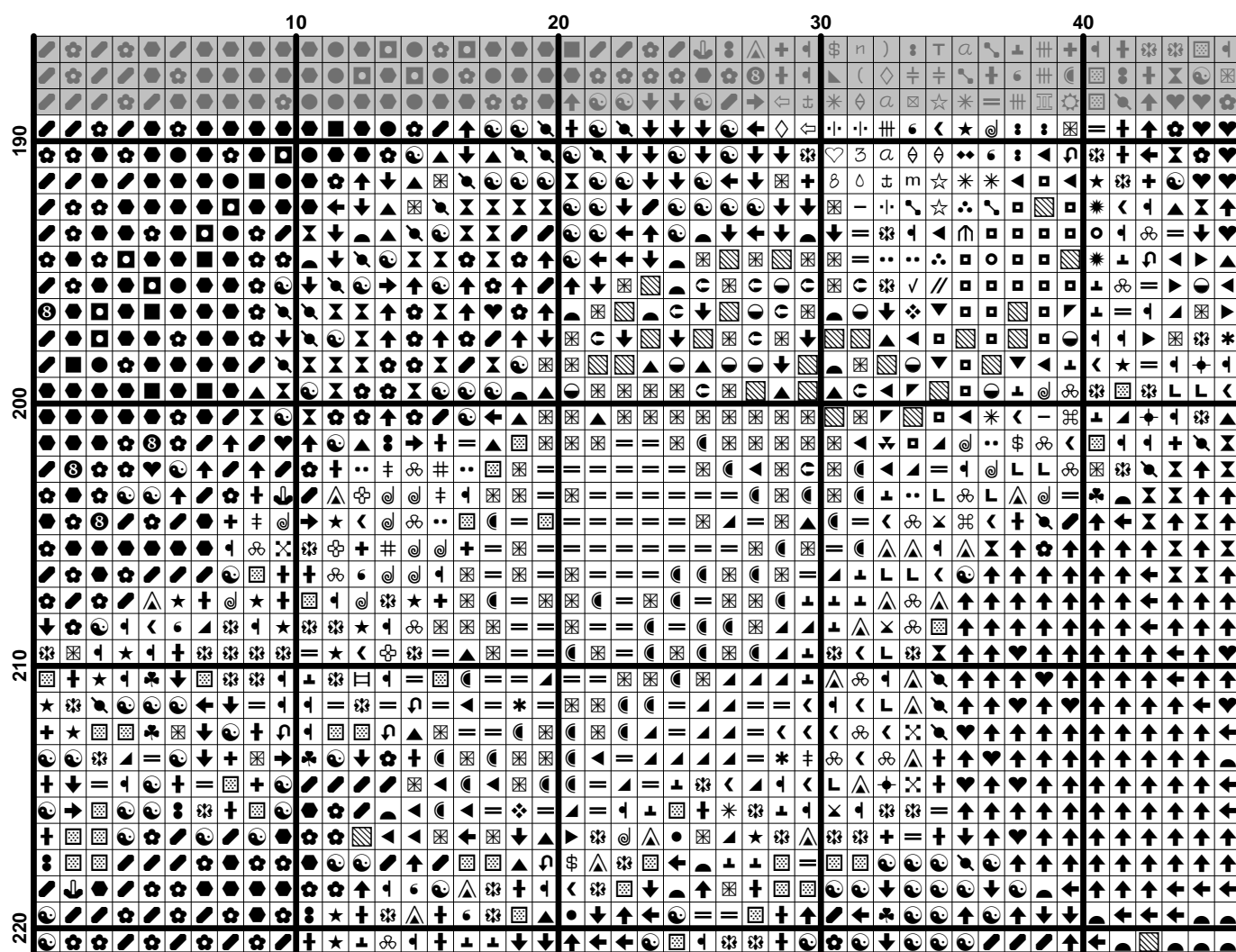
$$(24) \quad \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} f(s) ds = \frac{1}{\Gamma(\alpha)} \int_0^t (t-s)^{\alpha-1} \left(\sum_{k=0}^\infty \frac{(t-s)^k}{k!} f^{(k)}(s) \right) ds$$

(26)

	180	190	200	210
130				
140				
150				
160				
170				
180				

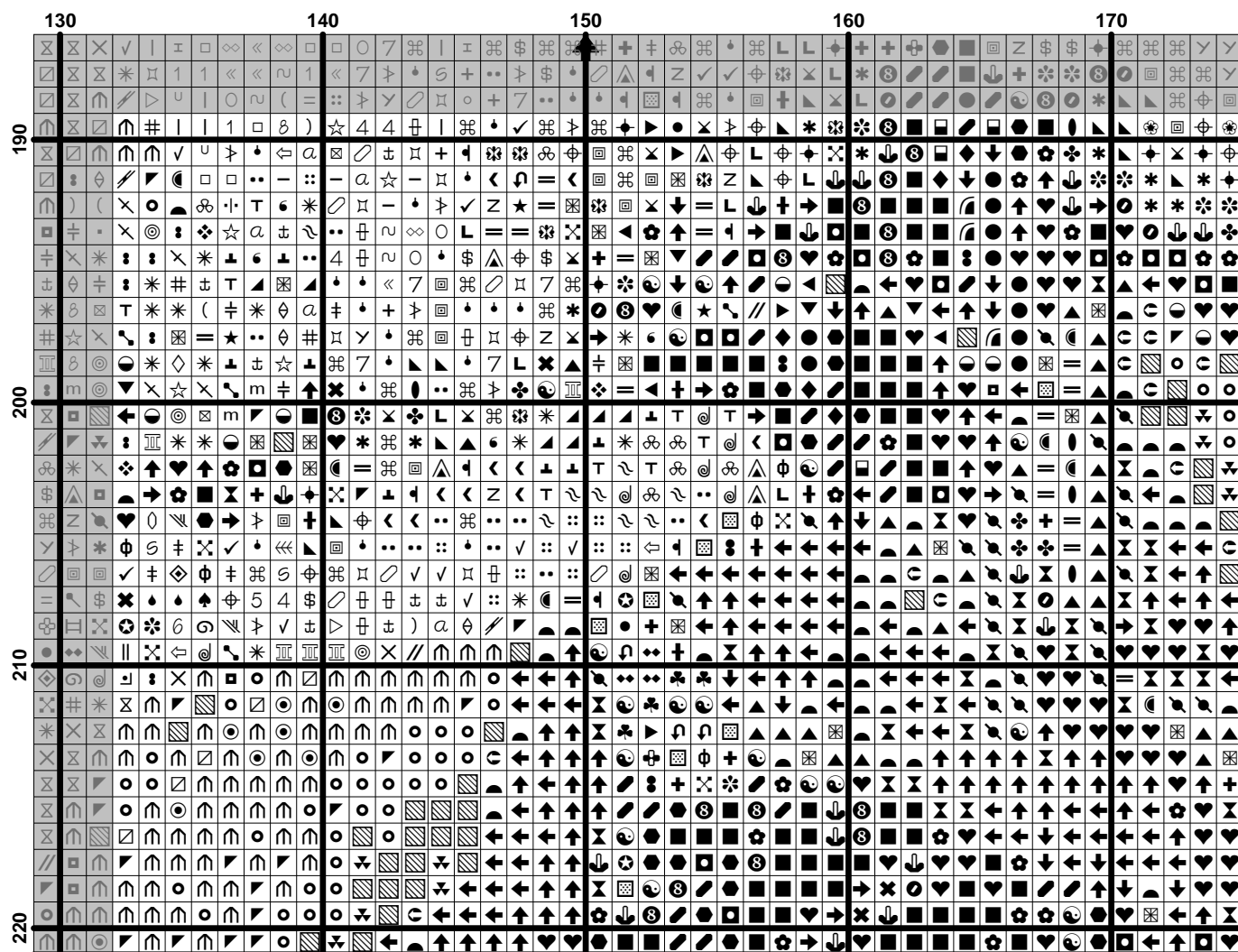
(28)

(28)



	50	60	70	80
190				
200				
210				
220				

[illegible]



	180										190										200										210									
190	[Grid 180 Row 1]										[Grid 190 Row 1]										[Grid 200 Row 1]										[Grid 210 Row 1]									
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200	[Grid 180 Row 6]										[Grid 190 Row 6]										[Grid 200 Row 6]										[Grid 210 Row 6]									
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[illegible]

[illegible]