Block-Wise Bordered and Pandiagonal Magic Squares Multiples of 7,
Zenodo, May 06, 2023, pp. 1-28, *https://doi.org/10.5281/zenodo.7903420*

Block-Wise Bordered and Pandiagonal Magic Squares Multiples of 7

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Abstract

*During past years author worked with **block-wise borderedmagic squares** of even number blocks. These are based on equal sums magic squares of orders 4, 6, 8, 10, etc. This type of work is an extension of classical bordered magic squares. In case of multiples of 4, the extension is made for **pandiagonal** magic squares [23]. For multiples of order 6 refer Taneja [24]. For the first time, we are presenting here bordered magic squares of odd number blocks. Recently, author worked on multiples of 3, based on different sums magic squares of order 3 [29]. The work for the borders multiples of 5 refer [30]. It is done with two types of magic squares of order 5. One type is pandiagonal magic squares, and anotheras bordered magic squares. Based on same procedure we worked with multiples of 7 based on magic squares of order 7. Padiagonal magic squares of orders 21, 28, 35 and 49 are also given. Higher order examples can be seen in **Excel file** attached with the work. The total work is up to order 140. Pandiagonal magic squares based on equal sums pandiagonal magic squares of order 7 are also included in the **Excel file**.*

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Contents

1 Introduction

During past years author [2, 3, 4, 5, 6, 7, 8] worked with **block-wise** magic squares from orders 12 to 47. Author [9, 10, 11, 12, 13, 14] also worked with **bordered** magic squares. The study on **bordered** magic squares is extended to **block-bordered** magic squares [15, 16, 17]. This is specially done for the magic squares of orders p and $2p$, where p is a prime number. This study is still extended to **block-wise bordered** magic squares [18, 19, 20, 21]. Some conection with Pythagorean triples and area-representations are also made [23, 24, 25, 26, 27]. The main property of **bordered** magic squares is that if we remove external borders, still we get **sub-bordered** magic squares, i.e., each layer in itself lead us to magic squares. In many cases, the properties of **bordered** magic square are seperated by **even** and **odd** orders magic squares. In many cases, we get good properties for the **even** order **bordered** magic squares. In some cases, we have to use fractional numbers to reach minimum perfect square sum of entries. For more study on **bordered** magic squares refer H. White's web-site [1].

The idea of bordered magic squares is already discussed by H. White's web-site [1] where the borders are of **single digits**. Borders multiples of even numbers starting from 4 are done extensively by author [23, 24, 25, 26, 27, 28].

Recently, for the first time, we presented bordered magic squares of odd number blocks. In case of multiples of 3, we worked with different sums magic squares of order 3. In case of multiples of 5, we worked with **pandiagonal** and **bordered** magic squares of order 5. This work is for multiples of 7. Here also we worked with two types of magic squares of order 7. One **pandiagonal** and another is **bordered** magic squares of order 7. The procedure, how to get these **block-wise bordered** magic squares is also explained. **Pandiagonal** magic squares multiples of 7 are also given. This work is up to order 49. Higher orders examples can be seen in **Excel file** attached with this work. Before proceeding further, let's summarize, the idea of **block-wise bordered** magic squares:

1.1 Classification of Bordered Magic Squares

- **Single Digit:** Bordered magic squares based on single digit [9, 10, 1].
- **Two Digits:** Bordered magic squares based on magic rectangles multiples of 2 [58, 59, 60, 61, 61].
- **Three Digits:** Bordered magic squares based on magic squares of order 3 [29].
- **Four Digits:** Bordered magic squares based on magic squares of order 4 [23].
- **Five Digits:** Bordered magic squares based on magic squares of order 5 [30].
- **Six Digits:** Bordered magic squares based on magic squares of order 6 [24].
- **Seven Digits:** Bordered magic squares based on magic squares of order 7 (This work).

For further even number multiples refer the following works of author:

- **Eight Digits:** Bordered magic squares based on magic squares of order 8 [25].
- **Ten Digits:** Bordered magic squares based on magic squares of order 10 [26].
- **Twelve Digits:** Bordered magic squares based on magic squares of order 12 [27].
- **Fourteen Digits:** Bordered magic squares based on magic squares of order 14 [28].

Let's see below the some examples of **block-wise bordered** magic squares multiples 7, where magic squares of order 7 are considered in two different ways.

2 Block-Wise Bordered Magic Squares

2.1 Magic Squares of Orders 42 and 49

Let's consider bordered magic square of orders 6 and 7 given by

6						111
6	30	3	36	4	32	111
35	17	22	11	24	2	111
29	12	23	18	21	8	111
27	26	13	20	15	10	111
9	19	16	25	14	28	111
5	7	34	1	33	31	111
111	111	111	111	111	111	111

7							175
44	38	40	5	4	2	42	175
11	34	30	15	14	32	39	175
9	19	28	21	26	31	41	175
7	17	23	25	27	33	43	175
47	37	24	29	22	13	3	175
49	18	20	35	36	16	1	175
8	12	10	45	46	48	6	175
175	175	175	175	175	175	175	175

The entries of above two magic squares are sequential numbers starting from 1:

$$D_{11\times 11} := \{1, 2, \ldots, 35, 36\}$$
$$D_{12\times 12} := \{1, 2, \ldots, 48, 49\}$$

These two magic squares are such that replacing the upper border still we are left with magic squares of sequential vales. Multiplying each entry by 49, we get

6						5439
294	1470	147	1764	196	1568	5439
1715	833	1078	539	1176	98	5439
1421	588	1127	882	1029	392	5439
1323	1274	637	980	735	490	5439
441	931	784	1225	686	1372	5439
245	343	1666	49	1617	1519	5439
5439	5439	5439	5439	5439	5439	5439

7							8575
2156	1862	1960	245	196	98	2058	8575
539	1666	1470	735	686	1568	1911	8575
441	931	1372	1029	1274	1519	2009	8575
343	833	1127	1225	1323	1617	2107	8575
2303	1813	1176	1421	1078	637	147	8575
2401	882	980	1715	1764	784	49	8575
392	588	490	2205	2254	2352	294	8575
8575	8575	8575	8575	8575	8575	8575	8575

The distributions of these two magic squares are given by

$$D1_{7\times 7} := \{49, 98, \ldots, 1715, 1764\}$$
$$D1_{8\times 8} := \{49, 98 \ldots, 2352, 2401\}.$$

In both the cases the difference between entries is 25. Now in each case replace the entries by magic squares of order 5 formed by the entries as given below:

$$\begin{aligned}
49 &\rightarrow 1, 2, \ldots, 49 \\
98 &\rightarrow 50, 51, \ldots, 98 \\
147 &\rightarrow 99, 100, \ldots, 147 \\
\ldots &\rightarrow \ldots \quad \ldots \\
2352 &\rightarrow 2304, 2305, \ldots, 2352 \\
2401 &\rightarrow 2353, 2354 \ldots, 2401
\end{aligned}$$

This lead us to following two bordered magic squares of orders 42 and 49.

42																																										37065
294	286	278	270	262	254	246	1470	1462	1454	1446	1438	1430	1422	147	139	131	123	115	107	99	1764	1756	1748	1740	1732	1724	1716	196	188	180	172	164	156	148	1568	1560	1552	1544	1536	1528	1520	37065
255	247	288	287	279	271	263	1431	1423	1464	1463	1455	1447	1439	108	100	141	140	132	124	116	1725	1717	1758	1757	1749	1741	1733	157	149	190	189	181	173	165	1529	1521	1562	1561	1553	1545	1537	37065
272	264	256	248	289	281	280	1448	1440	1432	1424	1465	1457	1456	125	117	109	101	142	134	133	1742	1734	1726	1718	1759	1751	1750	174	166	158	150	191	183	182	1546	1538	1530	1522	1563	1555	1554	37065
282	274	273	265	257	249	290	1458	1450	1449	1441	1433	1425	1466	135	127	126	118	110	102	143	1752	1744	1743	1735	1727	1719	1760	184	176	175	167	159	151	192	1556	1548	1547	1539	1531	1523	1564	37065
250	291	283	275	267	266	258	1426	1467	1459	1451	1443	1442	1434	103	144	136	128	120	119	111	1720	1761	1753	1745	1737	1736	1728	152	193	185	177	169	168	160	1524	1565	1557	1549	1541	1540	1532	37065
260	259	251	292	284	276	268	1436	1435	1427	1468	1460	1452	1444	113	112	104	145	137	129	121	1730	1729	1721	1762	1754	1746	1738	162	161	153	194	186	178	170	1534	1533	1525	1566	1558	1550	1542	37065
277	269	261	253	252	293	285	1453	1445	1437	1429	1428	1469	1461	130	122	114	106	105	146	138	1747	1739	1731	1723	1722	1763	1755	179	171	163	155	154	195	187	1551	1543	1535	1527	1526	1567	1559	37065
1715	1707	1699	1691	1683	1675	1667	833	825	817	809	801	793	785	1078	1070	1062	1054	1046	1038	1030	539	531	523	515	507	499	491	1176	1168	1160	1152	1144	1136	1128	98	90	82	74	66	58	50	37065
1676	1668	1709	1708	1700	1692	1684	794	786	827	826	818	810	802	1039	1031	1072	1071	1063	1055	1047	500	492	533	532	524	516	508	1137	1129	1170	1169	1161	1153	1145	59	51	92	91	83	75	67	37065
1693	1685	1677	1669	1710	1702	1701	811	803	795	787	828	820	819	1056	1048	1040	1032	1073	1065	1064	517	509	501	493	534	526	525	1154	1146	1138	1130	1171	1163	1162	76	68	60	52	93	85	84	37065
1703	1695	1694	1686	1678	1670	1711	821	813	812	804	796	788	829	1066	1058	1057	1049	1041	1033	1074	527	519	518	510	502	494	535	1164	1156	1155	1147	1139	1131	1172	86	78	77	69	61	53	94	37065
1671	1712	1704	1696	1688	1687	1679	789	830	822	814	806	805	797	1034	1075	1067	1059	1051	1050	1042	495	536	528	520	512	511	503	1132	1173	1165	1157	1149	1148	1140	54	95	87	79	71	70	62	37065
1681	1680	1672	1713	1705	1697	1689	799	798	790	831	823	815	807	1044	1043	1035	1076	1068	1060	1052	505	504	496	537	529	521	513	1142	1141	1133	1174	1166	1158	1150	64	63	55	96	88	80	72	37065
1698	1690	1682	1674	1673	1714	1706	816	808	800	792	791	832	824	1061	1053	1045	1037	1036	1077	1069	522	514	506	498	497	538	530	1159	1151	1143	1135	1134	1175	1167	81	73	65	57	56	97	89	37065
1421	1413	1405	1397	1389	1381	1373	588	580	572	564	556	548	540	1127	1119	1111	1103	1095	1087	1079	882	874	866	858	850	842	834	1029	1021	1013	1005	997	989	981	392	384	376	368	360	352	344	37065
1382	1374	1415	1414	1406	1398	1390	549	541	582	581	573	565	557	1088	1080	1121	1120	1112	1104	1096	843	835	876	875	867	859	851	990	982	1023	1022	1014	1006	998	353	345	386	385	377	369	361	37065
1399	1391	1383	1375	1416	1408	1407	566	558	550	542	583	575	574	1105	1097	1089	1081	1122	1114	1113	860	852	844	836	877	869	868	1007	999	991	983	1024	1016	1015	370	362	354	346	387	379	378	37065
1409	1401	1400	1392	1384	1376	1417	576	568	567	559	551	543	584	1115	1107	1106	1098	1090	1082	1123	870	862	861	853	845	837	878	1017	1009	1008	1000	992	984	1025	380	372	371	363	355	347	388	37065
1377	1418	1410	1402	1394	1393	1385	544	585	577	569	561	560	552	1083	1124	1116	1108	1100	1099	1091	838	879	871	863	855	854	846	985	1026	1018	1010	1002	1001	993	348	389	381	373	365	364	356	37065
1387	1386	1378	1419	1411	1403	1395	554	553	545	586	578	570	562	1093	1092	1084	1125	1117	1109	1101	848	847	839	880	872	864	856	995	994	986	1027	1019	1011	1003	358	357	349	390	382	374	366	37065
1404	1396	1388	1380	1379	1420	1412	571	563	555	547	546	587	579	1110	1102	1094	1086	1085	1126	1118	865	857	849	841	840	881	873	1012	1004	996	988	987	1028	1020	375	367	359	351	350	391	383	37065
1323	1315	1307	1299	1291	1283	1275	1274	1266	1258	1250	1242	1234	1226	637	629	621	613	605	597	589	980	972	964	956	948	940	932	735	727	719	711	703	695	687	490	482	474	466	458	450	442	37065
1284	1276	1317	1316	1308	1300	1292	1235	1227	1268	1267	1259	1251	1243	598	590	631	630	622	614	606	941	933	974	973	965	957	949	696	688	729	728	720	712	704	451	443	484	483	475	467	459	37065
1301	1293	1285	1277	1318	1310	1309	1252	1244	1236	1228	1269	1261	1260	615	607	599	591	632	624	623	958	950	942	934	975	967	966	713	705	697	689	730	722	721	468	460	452	444	485	477	476	37065
1311	1303	1302	1294	1286	1278	1319	1262	1254	1253	1245	1237	1229	1270	625	617	616	608	600	592	633	968	960	959	951	943	935	976	723	715	714	706	698	690	731	478	470	469	461	453	445	486	37065
1279	1320	1312	1304	1296	1295	1287	1230	1271	1263	1255	1247	1246	1238	593	634	626	618	610	609	601	936	977	969	961	953	952	944	691	732	724	716	708	707	699	446	487	479	471	463	462	454	37065
1289	1288	1280	1321	1313	1305	1297	1240	1239	1231	1272	1264	1256	1248	603	602	594	635	627	619	611	946	945	937	978	970	962	954	701	700	692	733	725	717	709	456	455	447	488	480	472	464	37065
1306	1298	1290	1282	1281	1322	1314	1257	1249	1241	1233	1232	1273	1265	620	612	604	596	595	636	628	963	955	947	939	938	979	971	718	710	702	694	693	734	726	473	465	457	449	448	489	481	37065
441	433	425	417	409	401	393	931	923	915	907	899	891	883	784	776	768	760	752	744	736	1225	1217	1209	1201	1193	1185	1177	686	678	670	662	654	646	638	1372	1364	1356	1348	1340	1332	1324	37065
402	394	435	434	426	418	410	892	884	925	924	916	908	900	745	737	778	777	769	761	753	1186	1178	1219	1218	1210	1202	1194	647	639	680	679	671	663	655	1333	1325	1366	1365	1357	1349	1341	37065
419	411	403	395	436	428	427	909	901	893	885	926	918	917	762	754	746	738	779	771	770	1203	1195	1187	1179	1220	1212	1211	664	656	648	640	681	673	672	1350	1342	1334	1326	1367	1359	1358	37065
429	421	420	412	404	396	437	919	911	910	902	894	886	927	772	764	763	755	747	739	780	1213	1205	1204	1196	1188	1180	1221	674	666	665	657	649	641	682	1360	1352	1351	1343	1335	1327	1368	37065
397	438	430	422	414	413	405	887	928	920	912	904	903	895	740	781	773	765	757	756	748	1181	1222	1214	1206	1198	1197	1189	642	683	675	667	659	658	650	1328	1369	1361	1353	1345	1344	1336	37065
407	406	398	439	431	423	415	897	896	888	929	921	913	905	750	749	741	782	774	766	758	1191	1190	1182	1223	1215	1207	1199	652	651	643	684	676	668	660	1338	1337	1329	1370	1362	1354	1346	37065
424	416	408	400	399	440	432	914	906	898	890	889	930	922	767	759	751	743	742	783	775	1208	1200	1192	1184	1183	1224	1216	669	661	653	645	644	685	677	1355	1347	1339	1331	1330	1371	1363	37065
245	237	229	221	213	205	197	343	335	327	319	311	303	295	1666	1658	1650	1642	1634	1626	1618	49	41	33	25	17	9	1	1617	1609	1601	1593	1585	1577	1569	1519	1511	1503	1495	1487	1479	1471	37065
206	198	239	238	230	222	214	304	296	337	336	328	320	312	1627	1619	1660	1659	1651	1643	1635	10	2	43	42	34	26	18	1578	1570	1611	1610	1602	1594	1586	1480	1472	1513	1512	1504	1496	1488	37065
223	215	207	199	240	232	231	321	313	305	297	338	330	329	1644	1636	1628	1620	1661	1653	1652	27	19	11	3	44	36	35	1595	1587	1579	1571	1612	1604	1603	1497	1489	1481	1473	1514	1506	1505	37065
233	225	224	216	208	200	241	331	323	322	314	306	298	339	1654	1646	1645	1637	1629	1621	1662	37	29	28	20	12	4	45	1605	1597	1596	1588	1580	1572	1613	1507	1499	1498	1490	1482	1474	1515	37065
201	242	234	226	218	217	209	299	340	332	324	316	315	307	1622	1663	1655	1647	1639	1638	1630	5	46	38	30	22	21	13	1573	1614	1606	1598	1590	1589	1581	1475	1516	1508	1500	1492	1491	1483	37065
211	210	202	243	235	227	219	309	308	300	341	333	325	317	1632	1631	1623	1664	1656	1648	1640	15	14	6	47	39	31	23	1583	1582	1574	1615	1607	1599	1591	1485	1484	1476	1517	1509	1501	1493	37065
228	220	212	204	203	244	236	326	318	310	302	301	342	334	1649	1641	1633	1625	1624	1665	1657	32	24	16	8	7	48	40	1600	1592	1584	1576	1575	1616	1608	1502	1494	1486	1478	1477	1518	1510	37065
37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065

42																																										37065
251	257	255	290	291	293	253	1427	1433	1431	1466	1467	1469	1429	104	110	108	143	144	146	106	1721	1727	1725	1760	1761	1763	1723	153	159	157	192	193	195	155	1525	1531	1529	1564	1565	1567	1527	37065
284	261	265	280	281	263	256	1460	1437	1441	1456	1457	1439	1432	137	114	118	133	134	116	109	1754	1731	1735	1750	1751	1733	1726	186	163	167	182	183	165	158	1558	1535	1539	1554	1555	1537	1530	37065
286	276	267	274	269	264	254	1462	1452	1443	1450	1445	1440	1430	139	129	120	127	122	117	107	1756	1746	1737	1744	1739	1734	1724	188	178	169	176	171	166	156	1560	1550	1541	1548	1543	1538	1528	37065
288	278	272	270	268	262	252	1464	1454	1448	1446	1444	1438	1428	141	131	125	123	121	115	105	1758	1748	1742	1740	1738	1732	1722	190	180	174	172	170	164	154	1562	1552	1546	1544	1542	1536	1526	37065
248	258	271	266	273	282	292	1424	1434	1447	1442	1449	1458	1468	101	111	124	119	126	135	145	1718	1728	1741	1736	1743	1752	1762	150	160	173	168	175	184	194	1522	1532	1545	1540	1547	1556	1566	37065
246	277	275	260	259	279	294	1422	1453	1451	1436	1435	1455	1470	99	130	128	113	112	132	147	1716	1747	1745	1730	1729	1749	1764	148	179	177	162	161	181	196	1520	1551	1549	1534	1533	1553	1568	37065
287	283	285	250	249	247	289	1463	1459	1461	1426	1425	1423	1465	140	136	138	103	102	100	142	1757	1753	1755	1720	1719	1717	1759	189	185	187	152	151	149	191	1561	1557	1559	1524	1523	1521	1563	37065
1672	1678	1676	1711	1712	1714	1674	790	796	794	829	830	832	792	1035	1041	1039	1074	1075	1077	1037	496	502	500	535	536	538	498	1133	1139	1137	1172	1173	1175	1135	55	61	59	94	95	97	57	37065
1705	1682	1686	1701	1702	1684	1677	823	800	804	819	820	802	795	1068	1045	1049	1064	1065	1047	1040	529	506	510	525	526	508	501	1166	1143	1147	1162	1163	1145	1138	88	65	69	84	85	67	60	37065
1707	1697	1688	1695	1690	1685	1675	825	815	806	813	808	803	793	1070	1060	1051	1058	1053	1048	1038	531	521	512	519	514	509	499	1168	1158	1149	1156	1151	1146	1136	90	80	71	78	73	68	58	37065
1709	1699	1693	1691	1689	1683	1673	827	817	811	809	807	801	791	1072	1062	1056	1054	1052	1046	1036	533	523	517	515	513	507	497	1170	1160	1154	1152	1150	1144	1134	92	82	76	74	72	66	56	37065
1669	1679	1692	1687	1694	1703	1713	787	797	810	805	812	821	831	1032	1042	1055	1050	1057	1066	1076	493	503	516	511	518	527	537	1130	1140	1153	1148	1155	1164	1174	52	62	75	70	77	86	96	37065
1667	1698	1696	1681	1680	1700	1715	785	816	814	799	798	818	833	1030	1061	1059	1044	1043	1063	1078	491	522	520	505	504	524	539	1128	1159	1157	1142	1141	1161	1176	50	81	79	64	63	83	98	37065
1708	1704	1706	1671	1670	1668	1710	826	822	824	789	788	786	828	1071	1067	1069	1034	1033	1031	1073	532	528	530	495	494	492	534	1169	1165	1167	1132	1131	1129	1171	91	87	89	54	53	51	93	37065
1378	1384	1382	1417	1418	1420	1380	545	551	549	584	585	587	547	1084	1090	1088	1123	1124	1126	1086	839	845	843	878	879	881	841	986	992	990	1025	1026	1028	988	349	355	353	388	389	391	351	37065
1411	1388	1392	1407	1408	1390	1383	578	555	559	574	575	557	550	1117	1094	1098	1113	1114	1096	1089	872	849	853	868	869	851	844	1019	996	1000	1015	1016	998	991	382	359	363	378	379	361	354	37065
1413	1403	1394	1401	1396	1391	1381	580	570	561	568	563	558	548	1119	1109	1100	1107	1102	1097	1087	874	864	855	862	857	852	842	1021	1011	1002	1009	1004	999	989	384	374	365	372	367	362	352	37065
1415	1405	1399	1397	1395	1389	1379	582	572	566	564	562	556	546	1121	1111	1105	1103	1101	1095	1085	876	866	860	858	856	850	840	1023	1013	1007	1005	1003	997	987	386	376	370	368	366	360	350	37065
1375	1385	1398	1393	1400	1409	1419	542	552	565	560	567	576	586	1081	1091	1104	1099	1106	1115	1125	836	846	859	854	861	870	880	983	993	1006	1001	1008	1017	1027	346	356	369	364	371	380	390	37065
1373	1404	1402	1387	1386	1406	1421	540	571	569	554	553	573	588	1079	1110	1108	1093	1092	1112	1127	834	865	863	848	847	867	882	981	1012	1010	995	994	1014	1029	344	375	373	358	357	377	392	37065
1414	1410	1412	1377	1376	1374	1416	581	577	579	544	543	541	583	1120	1116	1118	1083	1082	1080	1122	875	871	873	838	837	835	877	1022	1018	1020	985	984	982	1024	385	381	383	348	347	345	387	37065
1280	1286	1284	1319	1320	1322	1282	1231	1237	1235	1270	1271	1273	1233	594	600	598	633	634	636	596	937	943	941	976	977	979	939	692	698	696	731	732	734	694	447	453	451	486	487	489	449	37065
1313	1290	1294	1309	1310	1292	1285	1264	1241	1245	1260	1261	1243	1236	627	604	608	623	624	606	599	970	947	951	966	967	949	942	725	702	706	721	722	704	697	480	457	461	476	477	459	452	37065
1315	1305	1296	1303	1298	1293	1283	1266	1256	1247	1254	1249	1244	1234	629	619	610	617	612	607	597	972	962	953	960	955	950	940	727	717	708	715	710	705	695	482	472	463	470	465	460	450	37065
1317	1307	1301	1299	1297	1291	1281	1268	1258	1252	1250	1248	1242	1232	631	621	615	613	611	605	595	974	964	958	956	954	948	938	729	719	713	711	709	703	693	484	474	468	466	464	458	448	37065
1277	1287	1300	1295	1302	1311	1321	1228	1238	1251	1246	1253	1262	1272	591	601	614	609	616	625	635	934	944	957	952	959	968	978	689	699	712	707	714	723	733	444	454	467	462	469	478	488	37065
1275	1306	1304	1289	1288	1308	1323	1226	1257	1255	1240	1239	1259	1274	589	620	618	603	602	622	637	932	963	961	946	945	965	980	687	718	716	701	700	720	735	442	473	471	456	455	475	490	37065
1316	1312	1314	1279	1278	1276	1318	1267	1263	1265	1230	1229	1227	1269	630	626	628	593	592	590	632	973	969	971	936	935	933	975	728	724	726	691	690	688	730	483	479	481	446	445	443	485	37065
398	404	402	437	438	440	400	888	894	892	927	928	930	890	741	747	745	780	781	783	743	1182	1188	1186	1221	1222	1224	1184	643	649	647	682	683	685	645	1329	1335	1333	1368	1369	1371	1331	37065
431	408	412	427	428	410	403	921	898	902	917	918	900	893	774	751	755	770	771	753	746	1215	1192	1196	1211	1212	1194	1187	676	653	657	672	673	655	648	1362	1339	1343	1358	1359	1341	1334	37065
433	423	414	421	416	411	401	923	913	904	911	906	901	891	776	766	757	764	759	754	744	1217	1207	1198	1205	1200	1195	1185	678	668	659	666	661	656	646	1364	1354	1345	1352	1347	1342	1332	37065
435	425	419	417	415	409	399	925	915	909	907	905	899	889	778	768	762	760	758	752	742	1219	1209	1203	1201	1199	1193	1183	680	670	664	662	660	654	644	1366	1356	1350	1348	1346	1340	1330	37065
395	405	418	413	420	429	439	885	895	908	903	910	919	929	738	748	761	756	763	772	782	1179	1189	1202	1197	1204	1213	1223	640	650	663	658	665	674	684	1326	1336	1349	1344	1351	1360	1370	37065
393	424	422	407	406	426	441	883	914	912	897	896	916	931	736	767	765	750	749	769	784	1177	1208	1206	1191	1190	1210	1225	638	669	667	652	651	671	686	1324	1355	1353	1338	1337	1357	1372	37065
434	430	432	397	396	394	436	924	920	922	887	886	884	926	777	773	775	740	739	737	779	1218	1214	1216	1181	1180	1178	1220	679	675	677	642	641	639	681	1365	1361	1363	1328	1327	1325	1367	37065
202	208	206	241	242	244	204	300	306	304	339	340	342	302	1623	1629	1627	1662	1663	1665	1625	6	12	10	45	46	48	8	1574	1580	1578	1613	1614	1616	1576	1476	1482	1480	1515	1516	1518	1478	37065
235	212	216	231	232	214	207	333	310	314	329	330	312	305	1656	1633	1637	1652	1653	1635	1628	39	16	20	35	36	18	11	1607	1584	1588	1603	1604	1586	1579	1509	1486	1490	1505	1506	1488	1481	37065
237	227	218	225	220	215	205	335	325	316	323	318	313	303	1658	1648	1639	1646	1641	1636	1626	41	31	22	29	24	19	9	1609	1599	1590	1597	1592	1587	1577	1511	1501	1492	1499	1494	1489	1479	37065
239	229	223	221	219	213	203	337	327	321	319	317	311	301	1660	1650	1644	1642	1640	1634	1624	43	33	27	25	23	17	7	1611	1601	1595	1593	1591	1585	1575	1513	1503	1497	1495	1493	1487	1477	37065
199	209	222	217	224	233	243	297	307	320	315	322	331	341	1620	1630	1643	1638	1645	1654	1664	3	13	26	21	28	37	47	1571	1581	1594	1589	1596	1605	1615	1473	1483	1496	1491	1498	1507	1517	37065
197	228	226	211	210	230	245	295	326	324	309	308	328	343	1618	1649	1647	1632	1631	1651	1666	1	32	30	15	14	34	49	1569	1600	1598	1583	1582	1602	1617	1471	1502	1500	1485	1484	1504	1519	37065
238	234	236	201	200	198	240	336	332	334	299	298	296	338	1659	1655	1657	1622	1621	1619	1661	42	38	40	5	4	2	44	1610	1606	1608	1573	1572	1570	1612	1512	1508	1510	1475	1474	1472	1514	37065
37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065	37065

Above two magic squares of order 42 formed by blocks of magic squares of order 7 are with sequential entries:

$$D_{35\times 35} := \{1, 2, \ldots, 1763, 1764\}$$

Below are two bordered magic squares of order 49 with blocks of magic squares of order 7:

Block-Wise Bordered and Pandiagonal Magic Squares Multiples of 7,
Zenodo, May 06, 2023, pp. 1-28, *https://doi.org/10.5281/zenodo.7903420*

49																																																	58849
2156	2148	2140	2132	2124	2116	2108	1862	1854	1846	1838	1830	1822	1814	1960	1952	1944	1936	1928	1920	1912	245	237	229	221	213	205	197	196	188	180	172	164	156	148	98	90	82	74	66	58	50	2058	2050	2042	2034	2026	2018	2010	58849
2117	2109	2150	2149	2141	2133	2125	1823	1815	1856	1855	1847	1839	1831	1921	1913	1954	1953	1945	1937	1929	206	198	239	238	230	222	214	157	149	190	189	181	173	165	59	51	92	91	83	75	67	2019	2011	2052	2051	2043	2035	2027	58849
2134	2126	2118	2110	2151	2143	2142	1840	1832	1824	1816	1857	1849	1848	1938	1930	1922	1914	1955	1947	1946	223	215	207	199	240	232	231	174	166	158	150	191	183	182	76	68	60	52	93	85	84	2036	2028	2020	2012	2053	2045	2044	58849
2144	2136	2135	2127	2119	2111	2152	1850	1842	1841	1833	1825	1817	1858	1948	1940	1939	1931	1923	1915	1956	233	225	224	216	208	200	241	184	176	175	167	159	151	192	86	78	77	69	61	53	94	2046	2038	2037	2029	2021	2013	2054	58849
2112	2153	2145	2137	2129	2128	2120	1818	1859	1851	1843	1835	1834	1826	1916	1957	1949	1941	1933	1932	1924	201	242	234	226	218	217	209	152	193	185	177	169	168	160	54	95	87	79	71	70	62	2014	2055	2047	2039	2031	2030	2022	58849
2122	2121	2113	2154	2146	2138	2130	1828	1827	1819	1860	1852	1844	1836	1926	1925	1917	1958	1950	1942	1934	211	210	202	243	235	227	219	162	161	153	194	186	178	170	64	63	55	96	88	80	72	2024	2023	2015	2056	2048	2040	2032	58849
2139	2131	2123	2115	2114	2155	2147	1845	1837	1829	1821	1820	1861	1853	1943	1935	1927	1919	1918	1959	1951	228	220	212	204	203	244	236	179	171	163	155	154	195	187	81	73	65	57	56	97	89	2041	2033	2025	2017	2016	2057	2049	58849
539	531	523	515	507	499	491	1666	1658	1650	1642	1634	1626	1618	1470	1462	1454	1446	1438	1430	1422	735	727	719	711	703	695	687	686	678	670	662	654	646	638	1568	1560	1552	1544	1536	1528	1520	1911	1903	1895	1887	1879	1871	1863	58849
500	492	533	532	524	516	508	1627	1619	1660	1659	1651	1643	1635	1431	1423	1464	1463	1455	1447	1439	696	688	729	728	720	712	704	647	639	680	679	671	663	655	1529	1521	1562	1561	1553	1545	1537	1872	1864	1905	1904	1896	1888	1880	58849
517	509	501	493	534	526	525	1644	1636	1628	1620	1661	1653	1652	1448	1440	1432	1424	1465	1457	1456	713	705	697	689	730	722	721	664	656	648	640	681	673	672	1546	1538	1530	1522	1563	1555	1554	1889	1881	1873	1865	1906	1898	1897	58849
527	519	518	510	502	494	535	1654	1646	1645	1637	1629	1621	1662	1458	1450	1449	1441	1433	1425	1466	723	715	714	706	698	690	731	674	666	665	657	649	641	682	1556	1548	1547	1539	1531	1523	1564	1899	1891	1890	1882	1874	1866	1907	58849
495	536	528	520	512	511	503	1622	1663	1655	1647	1639	1638	1630	1426	1467	1459	1451	1443	1442	1434	691	732	724	716	708	707	699	642	683	675	667	659	658	650	1524	1565	1557	1549	1541	1540	1532	1867	1908	1900	1892	1884	1883	1875	58849
505	504	496	537	529	521	513	1632	1631	1623	1664	1656	1648	1640	1436	1435	1427	1468	1460	1452	1444	701	700	692	733	725	717	709	652	651	643	684	676	668	660	1534	1533	1525	1566	1558	1550	1542	1877	1876	1868	1909	1901	1893	1885	58849
522	514	506	498	497	538	530	1649	1641	1633	1625	1624	1665	1657	1453	1445	1437	1429	1428	1469	1461	718	710	702	694	693	734	726	669	661	653	645	644	685	677	1551	1543	1535	1527	1526	1567	1559	1894	1886	1878	1870	1869	1910	1902	58849
441	433	425	417	409	401	393	931	923	915	907	899	891	883	1372	1364	1356	1348	1340	1332	1324	1029	1021	1013	1005	997	989	981	1274	1266	1258	1250	1242	1234	1226	1519	1511	1503	1495	1487	1479	1471	2009	2001	1993	1985	1977	1969	1961	58849
402	394	435	434	426	418	410	892	884	925	924	916	908	900	1333	1325	1366	1365	1357	1349	1341	990	982	1023	1022	1014	1006	998	1235	1227	1268	1267	1259	1251	1243	1480	1472	1513	1512	1504	1496	1488	1970	1962	2003	2002	1994	1986	1978	58849
419	411	403	395	436	428	427	909	901	893	885	926	918	917	1350	1342	1334	1326	1367	1359	1358	1007	999	991	983	1024	1016	1015	1252	1244	1236	1228	1269	1261	1260	1497	1489	1481	1473	1514	1506	1505	1987	1979	1971	1963	2004	1996	1995	58849
429	421	420	412	404	396	437	919	911	910	902	894	886	927	1360	1352	1351	1343	1335	1327	1368	1017	1009	1008	1000	992	984	1025	1262	1254	1253	1245	1237	1229	1270	1507	1499	1498	1490	1482	1474	1515	1997	1989	1988	1980	1972	1964	2005	58849
397	438	430	422	414	413	405	887	928	920	912	904	903	895	1328	1369	1361	1353	1345	1344	1336	985	1026	1018	1010	1002	1001	993	1230	1271	1263	1255	1247	1246	1238	1475	1516	1508	1500	1492	1491	1483	1965	2006	1998	1990	1982	1981	1973	58849
407	406	398	439	431	423	415	897	896	888	929	921	913	905	1338	1337	1329	1370	1362	1354	1346	995	994	986	1027	1019	1011	1003	1240	1239	1231	1272	1264	1256	1248	1485	1484	1476	1517	1509	1501	1493	1975	1974	1966	2007	1999	1991	1983	58849
424	416	408	400	399	440	432	914	906	898	890	889	930	922	1355	1347	1339	1331	1330	1371	1363	1012	1004	996	988	987	1028	1020	1257	1249	1241	1233	1232	1273	1265	1502	1494	1486	1478	1477	1518	1510	1992	1984	1976	1968	1967	2008	2000	58849
343	335	327	319	311	303	295	833	825	817	809	801	793	785	1127	1119	1111	1103	1095	1087	1079	1225	1217	1209	1201	1193	1185	1177	1323	1315	1307	1299	1291	1283	1275	1617	1609	1601	1593	1585	1577	1569	2107	2099	2091	2083	2075	2067	2059	58849
304	296	337	336	328	320	312	794	786	827	826	818	810	802	1088	1080	1121	1120	1112	1104	1096	1186	1178	1219	1218	1210	1202	1194	1284	1276	1317	1316	1308	1300	1292	1578	1570	1611	1610	1602	1594	1586	2068	2060	2101	2100	2092	2084	2076	58849
321	313	305	297	338	330	329	811	803	795	787	828	820	819	1105	1097	1089	1081	1122	1114	1113	1203	1195	1187	1179	1220	1212	1211	1301	1293	1285	1277	1318	1310	1309	1595	1587	1579	1571	1612	1604	1603	2085	2077	2069	2061	2102	2094	2093	58849
331	323	322	314	306	298	339	821	813	812	804	796	788	829	1115	1107	1106	1098	1090	1082	1123	1213	1205	1204	1196	1188	1180	1221	1311	1303	1302	1294	1286	1278	1319	1605	1597	1596	1588	1580	1572	1613	2095	2087	2086	2078	2070	2062	2103	58849
299	340	332	324	316	315	307	789	830	822	814	806	805	797	1083	1124	1116	1108	1100	1099	1091	1181	1222	1214	1206	1198	1197	1189	1279	1320	1312	1304	1296	1295	1287	1573	1614	1606	1598	1590	1589	1581	2063	2104	2096	2088	2080	2079	2071	58849
309	308	300	341	333	325	317	799	798	790	831	823	815	807	1093	1092	1084	1125	1117	1109	1101	1191	1190	1182	1223	1215	1207	1199	1289	1288	1280	1321	1313	1305	1297	1583	1582	1574	1615	1607	1599	1591	2073	2072	2064	2105	2097	2089	2081	58849
326	318	310	302	301	342	334	816	808	800	792	791	832	824	1110	1102	1094	1086	1085	1126	1118	1208	1200	1192	1184	1183	1224	1216	1306	1298	1290	1282	1281	1322	1314	1600	1592	1584	1576	1575	1616	1608	2090	2082	2074	2066	2065	2106	2098	58849
2303	2295	2287	2279	2271	2263	2255	1813	1805	1797	1789	1781	1773	1765	1176	1168	1160	1152	1144	1136	1128	1421	1413	1405	1397	1389	1381	1373	1078	1070	1062	1054	1046	1038	1030	637	629	621	613	605	597	589	147	139	131	123	115	107	99	58849
2264	2256	2297	2296	2288	2280	2272	1774	1766	1807	1806	1798	1790	1782	1137	1129	1170	1169	1161	1153	1145	1382	1374	1415	1414	1406	1398	1390	1039	1031	1072	1071	1063	1055	1047	598	590	631	630	622	614	606	108	100	141	140	132	124	116	58849
2281	2273	2265	2257	2298	2290	2289	1791	1783	1775	1767	1808	1800	1799	1154	1146	1138	1130	1171	1163	1162	1399	1391	1383	1375	1416	1408	1407	1056	1048	1040	1032	1073	1065	1064	615	607	599	591	632	624	623	125	117	109	101	142	134	133	58849
2291	2283	2282	2274	2266	2258	2299	1801	1793	1792	1784	1776	1768	1809	1164	1156	1155	1147	1139	1131	1172	1409	1401	1400	1392	1384	1376	1417	1066	1058	1057	1049	1041	1033	1074	625	617	616	608	600	592	633	135	127	126	118	110	102	143	58849
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2353	2384	2382	2367	2366	2386	2401	834	865	863	848	847	867	882	932	963	961	946	945	965	980	1667	1698	1696	1681	1680	1700	1715	1716	1747	1745	1730	1729	1749	1764	736	767	765	750	749	769	784	1	32	30	15	14	34	49	58849
2394	2390	2392	2357	2356	2354	2396	875	871	873	838	837	835	877	973	969	971	936	935	933	975	1708	1704	1706	1671	1670	1668	1710	1757	1753	1755	1720	1719	1717	1759	777	773	775	740	739	737	779	42	38	40	5	4	2	44	58849
349	355	353	388	389	391	351	545	551	549	584	585	587	547	447	453	451	486	487	489	449	2162	2168	2166	2201	2202	2204	2164	2211	2217	2215	2250	2251	2253	2213	2309	2315	2313	2348	2349	2351	2311	251	257	255	290	291	293	253	58849
382	359	363	378	379	361	354	578	555	559	574	575	557	550	480	457	461	476	477	459	452	2195	2172	2176	2191	2192	2174	2167	2244	2221	2225	2240	2241	2223	2216	2342	2319	2323	2338	2339	2321	2314	284	261	265	280	281	263	256	58849
384	374	365	372	367	362	352	580	570	561	568	563	558	548	482	472	463	470	465	460	450	2197	2187	2178	2185	2180	2175	2165	2246	2236	2227	2234	2229	2224	2214	2344	2334	2325	2332	2327	2322	2312	286	276	267	274	269	264	254	58849
386	376	370	368	366	360	350	582	572	566	564	562	556	546	484	474	468	466	464	458	448	2199	2189	2183	2181	2179	2173	2163	2248	2238	2232	2230	2228	2222	2212	2346	2336	2330	2328	2326	2320	2310	288	278	272	270	268	262	252	58849
346	356	369	364	371	380	390	542	552	565	560	567	576	586	444	454	467	462	469	478	488	2159	2169	2182	2177	2184	2193	2203	2208	2218	2231	2226	2233	2242	2252	2306	2316	2329	2324	2331	2340	2350	248	258	271	266	273	282	292	58849
344	375	373	358	357	377	392	540	571	569	554	553	573	588	442	473	471	456	455	475	490	2157	2188	2186	2171	2170	2190	2205	2206	2237	2235	2220	2219	2239	2254	2304	2335	2333	2318	2317	2337	2352	246	277	275	260	259	279	294	58849
385	381	383	348	347	345	387	581	577	579	544	543	541	583	483	479	481	446	445	443	485	2198	2194	2196	2161	2160	2158	2200	2247	2243	2245	2210	2209	2207	2249	2345	2341	2343	2308	2307	2305	2347	287	283	285	250	249	247	289	58849
58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849

Above two magic squares of order 49 formed by blocks of magic squares of order 7 are with sequential entries:

$$D_{40\times 40} := \{1, 2, \ldots, 2400, 2401\}.$$

These four magic squares are bordered magic squares with border made by **pandiagonal** and **bordered** magic squares of order 5. If you remove the external borders, still we are left with magic squares of lower orders. Let's see how it works.

2.2 Magic Squares of Order 35

These magic squares are obtained from above by the application of the formula $\frac{a^2-b^2}{2}$, $a > b$. Removing the external border of order 7 and then subtracting $\frac{49^2-35^2}{2} := 588$ from magic squares of orders 49, we get magic squares of order 35 given by

Block-Wise Bordered and Pandiagonal Magic Squares Multiples of 7,
Zenodo, May 06, 2023, pp. 1-28, *https://doi.org/10.5281/zenodo.7903420*

35																																			21455
1078	1070	1062	1054	1046	1038	1030	882	874	866	858	850	842	834	147	139	131	123	115	107	99	98	90	82	74	66	58	50	980	972	964	956	948	940	932	21455
1039	1031	1072	1071	1063	1055	1047	843	835	876	875	867	859	851	108	100	141	140	132	124	116	59	51	92	91	83	75	67	941	933	974	973	965	957	949	21455
1056	1048	1040	1032	1073	1065	1064	860	852	844	836	877	869	868	125	117	109	101	142	134	133	76	68	60	52	93	85	84	958	950	942	934	975	967	966	21455
1066	1058	1057	1049	1041	1033	1074	870	862	861	853	845	837	878	135	127	126	118	110	102	143	86	78	77	69	61	53	94	968	960	959	951	943	935	976	21455
1034	1075	1067	1059	1051	1050	1042	838	879	871	863	855	854	846	103	144	136	128	120	119	111	54	95	87	79	71	70	62	936	977	969	961	953	952	944	21455
1044	1043	1035	1076	1068	1060	1052	848	847	839	880	872	864	856	113	112	104	145	137	129	121	64	63	55	96	88	80	72	946	945	937	978	970	962	954	21455
1061	1053	1045	1037	1036	1077	1069	865	857	849	841	840	881	873	130	122	114	106	105	146	138	81	73	65	57	56	97	89	963	955	947	939	938	979	971	21455
343	335	327	319	311	303	295	784	776	768	760	752	744	736	441	433	425	417	409	401	393	686	678	670	662	654	646	638	931	923	915	907	899	891	883	21455
304	296	337	336	328	320	312	745	737	778	777	769	761	753	402	394	435	434	426	418	410	647	639	680	679	671	663	655	892	884	925	924	916	908	900	21455
321	313	305	297	338	330	329	762	754	746	738	779	771	770	419	411	403	395	436	428	427	664	656	648	640	681	673	672	909	901	893	885	926	918	917	21455
331	323	322	314	306	298	339	772	764	763	755	747	739	780	429	421	420	412	404	396	437	674	666	665	657	649	641	682	919	911	910	902	894	886	927	21455
299	340	332	324	316	315	307	740	781	773	765	757	756	748	397	438	430	422	414	413	405	642	683	675	667	659	658	650	887	928	920	912	904	903	895	21455
309	308	300	341	333	325	317	750	749	741	782	774	766	758	407	406	398	439	431	423	415	652	651	643	684	676	668	660	897	896	888	929	921	913	905	21455
326	318	310	302	301	342	334	767	759	751	743	742	783	775	424	416	408	400	399	440	432	669	661	653	645	644	685	677	914	906	898	890	889	930	922	21455
245	237	229	221	213	205	197	539	531	523	515	507	499	491	637	629	621	613	605	597	589	735	727	719	711	703	695	687	1029	1021	1013	1005	997	989	981	21455
206	198	239	238	230	222	214	500	492	533	532	524	516	508	598	590	631	630	622	614	606	696	688	729	728	720	712	704	990	982	1023	1022	1014	1006	998	21455
223	215	207	199	240	232	231	517	509	501	493	534	526	525	615	607	599	591	632	624	623	713	705	697	689	730	722	721	1007	999	991	983	1024	1016	1015	21455
233	225	224	216	208	200	241	527	519	518	510	502	494	535	625	617	616	608	600	592	633	723	715	714	706	698	690	731	1017	1009	1008	1000	992	984	1025	21455
201	242	234	226	218	217	209	495	536	528	520	512	511	503	593	634	626	618	610	609	601	691	732	724	716	708	707	699	985	1026	1018	1010	1002	1001	993	21455
211	210	202	243	235	227	219	505	504	496	537	529	521	513	603	602	594	635	627	619	611	701	700	692	733	725	717	709	995	994	986	1027	1019	1011	1003	21455
228	220	212	204	203	244	236	522	514	506	498	497	538	530	620	612	604	596	595	636	628	718	710	702	694	693	734	726	1012	1004	996	988	987	1028	1020	21455
1225	1217	1209	1201	1193	1185	1177	588	580	572	564	556	548	540	833	825	817	809	801	793	785	490	482	474	466	458	450	442	49	41	33	25	17	9	1	21455
1186	1178	1219	1218	1210	1202	1194	549	541	582	581	573	565	557	794	786	827	826	818	810	802	451	443	484	483	475	467	459	10	2	43	42	34	26	18	21455
1203	1195	1187	1179	1220	1212	1211	566	558	550	542	583	575	574	811	803	795	787	828	820	819	468	460	452	444	485	477	476	27	19	11	3	44	36	35	21455
1213	1205	1204	1196	1188	1180	1221	576	568	567	559	551	543	584	821	813	812	804	796	788	829	478	470	469	461	453	445	486	37	29	28	20	12	4	45	21455
1181	1222	1214	1206	1198	1197	1189	544	585	577	569	561	560	552	789	830	822	814	806	805	797	446	487	479	471	463	462	454	5	46	38	30	22	21	13	21455
1191	1190	1182	1223	1215	1207	1199	554	553	545	586	578	570	562	799	798	790	831	823	815	807	456	455	447	488	480	472	464	15	14	6	47	39	31	23	21455
1208	1200	1192	1184	1183	1224	1216	571	563	555	547	546	587	579	816	808	800	792	791	832	824	473	465	457	449	448	489	481	32	24	16	8	7	48	40	21455
294	286	278	270	262	254	246	392	384	376	368	360	352	344	1127	1119	1111	1103	1095	1087	1079	1176	1168	1160	1152	1144	1136	1128	196	188	180	172	164	156	148	21455
255	247	288	287	279	271	263	353	345	386	385	377	369	361	1088	1080	1121	1120	1112	1104	1096	1137	1129	1170	1169	1161	1153	1145	157	149	190	189	181	173	165	21455
272	264	256	248	289	281	280	370	362	354	346	387	379	378	1105	1097	1089	1081	1122	1114	1113	1154	1146	1138	1130	1171	1163	1162	174	166	158	150	191	183	182	21455
282	274	273	265	257	249	290	380	372	371	363	355	347	388	1115	1107	1106	1098	1090	1082	1123	1164	1156	1155	1147	1139	1131	1172	184	176	175	167	159	151	192	21455
250	291	283	275	267	266	258	348	389	381	373	365	364	356	1083	1124	1116	1108	1100	1099	1091	1132	1173	1165	1157	1149	1148	1140	152	193	185	177	169	168	160	21455
260	259	251	292	284	276	268	358	357	349	390	382	374	366	1093	1092	1084	1125	1117	1109	1101	1142	1141	1133	1174	1166	1158	1150	162	161	153	194	186	178	170	21455
277	269	261	253	252	293	285	375	367	359	351	350	391	383	1110	1102	1094	1086	1085	1126	1118	1159	1151	1143	1135	1134	1175	1167	179	171	163	155	154	195	187	21455
21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455

35																																			21455
1035	1041	1039	1074	1075	1077	1037	839	845	843	878	879	881	841	104	110	108	143	144	146	106	55	61	59	94	95	97	57	937	943	941	976	977	979	939	21455
1068	1045	1049	1064	1065	1047	1040	872	849	853	868	869	851	844	137	114	118	133	134	116	109	88	65	69	84	85	67	60	970	947	951	966	967	949	942	21455
1070	1060	1051	1058	1053	1048	1038	874	864	855	862	857	852	842	139	129	120	127	122	117	107	90	80	71	78	73	68	58	972	962	953	960	955	950	940	21455
1072	1062	1056	1054	1052	1046	1036	876	866	860	858	856	850	840	141	131	125	123	121	115	105	92	82	76	74	72	66	56	974	964	958	956	954	948	938	21455
1032	1042	1055	1050	1057	1066	1076	836	846	859	854	861	870	880	101	111	124	119	126	135	145	52	62	75	70	77	86	96	934	944	957	952	959	968	978	21455
1030	1061	1059	1044	1043	1063	1078	834	865	863	848	847	867	882	99	130	128	113	112	132	147	50	81	79	64	63	83	98	932	963	961	946	945	965	980	21455
1071	1067	1069	1034	1033	1031	1073	875	871	873	838	837	835	877	140	136	138	103	102	100	142	91	87	89	54	53	51	93	973	969	971	936	935	933	975	21455
300	306	304	339	340	342	302	741	747	745	780	781	783	743	398	404	402	437	438	440	400	643	649	647	682	683	685	645	888	894	892	927	928	930	890	21455
333	310	314	329	330	312	305	774	751	755	770	771	753	746	431	408	412	427	428	410	403	676	653	657	672	673	655	648	921	898	902	917	918	900	893	21455
335	325	316	323	318	313	303	776	766	757	764	759	754	744	433	423	414	421	416	411	401	678	668	659	666	661	656	646	923	913	904	911	906	901	891	21455
337	327	321	319	317	311	301	778	768	762	760	758	752	742	435	425	419	417	415	409	399	680	670	664	662	660	654	644	925	915	909	907	905	899	889	21455
297	307	320	315	322	331	341	738	748	761	756	763	772	782	395	405	418	413	420	429	439	640	650	663	658	665	674	684	885	895	908	903	910	919	929	21455
295	326	324	309	308	328	343	736	767	765	750	749	769	784	393	424	422	407	406	426	441	638	669	667	652	651	671	686	883	914	912	897	896	916	931	21455
336	332	334	299	298	296	338	777	773	775	740	739	737	779	434	430	432	397	396	394	436	679	675	677	642	641	639	681	924	920	922	887	886	884	926	21455
202	208	206	241	242	244	204	496	502	500	535	536	538	498	594	600	598	633	634	636	596	692	698	696	731	732	734	694	986	992	990	1025	1026	1028	988	21455
235	212	216	231	232	214	207	529	506	510	525	526	508	501	627	604	608	623	624	606	599	725	702	706	721	722	704	697	1019	996	1000	1015	1016	998	991	21455
237	227	218	225	220	215	205	531	521	512	519	514	509	499	629	619	610	617	612	607	597	727	717	708	715	710	705	695	1021	1011	1002	1009	1004	999	989	21455
239	229	223	221	219	213	203	533	523	517	515	513	507	497	631	621	615	613	611	605	595	729	719	713	711	709	703	693	1023	1013	1007	1005	1003	997	987	21455
199	209	222	217	224	233	243	493	503	516	511	518	527	537	591	601	614	609	616	625	635	689	699	712	707	714	723	733	983	993	1006	1001	1008	1017	1027	21455
197	228	226	211	210	230	245	491	522	520	505	504	524	539	589	620	618	603	602	622	637	687	718	716	701	700	720	735	981	1012	1010	995	994	1014	1029	21455
238	234	236	201	200	198	240	532	528	530	495	494	492	534	630	626	628	593	592	590	632	728	724	726	691	690	688	730	1022	1018	1020	985	984	982	1024	21455
1182	1188	1186	1221	1222	1224	1184	545	551	549	584	585	587	547	790	796	794	829	830	832	792	447	453	451	486	487	489	449	6	12	10	45	46	48	8	21455
1215	1192	1196	1211	1212	1194	1187	578	555	559	574	575	557	550	823	800	804	819	820	802	795	480	457	461	476	477	459	452	39	16	20	35	36	18	11	21455
1217	1207	1198	1205	1200	1195	1185	580	570	561	568	563	558	548	825	815	806	813	808	803	793	482	472	463	470	465	460	450	41	31	22	29	24	19	9	21455
1219	1209	1203	1201	1199	1193	1183	582	572	566	564	562	556	546	827	817	811	809	807	801	791	484	474	468	466	464	458	448	43	33	27	25	23	17	7	21455
1179	1189	1202	1197	1204	1213	1223	542	552	565	560	567	576	586	787	797	810	805	812	821	831	444	454	467	462	469	478	488	3	13	26	21	28	37	47	21455
1177	1208	1206	1191	1190	1210	1225	540	571	569	554	553	573	588	785	816	814	799	798	818	833	442	473	471	456	455	475	490	1	32	30	15	14	34	49	21455
1218	1214	1216	1181	1180	1178	1220	581	577	579	544	543	541	583	826	822	824	789	788	786	828	483	479	481	446	445	443	485	42	38	40	5	4	2	44	21455
251	257	255	290	291	293	253	349	355	353	388	389	391	351	1084	1090	1088	1123	1124	1126	1086	1133	1139	1137	1172	1173	1175	1135	153	159	157	192	193	195	155	21455
284	261	265	280	281	263	256	382	359	363	378	379	361	354	1117	1094	1098	1113	1114	1096	1089	1166	1143	1147	1162	1163	1145	1138	186	163	167	182	183	165	158	21455
286	276	267	274	269	264	254	384	374	365	372	367	362	352	1119	1109	1100	1107	1102	1097	1087	1168	1158	1149	1156	1151	1146	1136	188	178	169	176	171	166	156	21455
288	278	272	270	268	262	252	386	376	370	368	366	360	350	1121	1111	1105	1103	1101	1095	1085	1170	1160	1154	1152	1150	1144	1134	190	180	174	172	170	164	154	21455
248	258	271	266	273	282	292	346	356	369	364	371	380	390	1081	1091	1104	1099	1106	1115	1125	1130	1140	1153	1148	1155	1164	1174	150	160	173	168	175	184	194	21455
246	277	275	260	259	279	294	344	375	373	358	357	377	392	1079	1110	1108	1093	1092	1112	1127	1128	1159	1157	1142	1141	1161	1176	148	179	177	162	161	181	196	21455
287	283	285	250	249	247	289	385	381	383	348	347	345	387	1120	1116	1118	1083	1082	1080	1122	1169	1165	1167	1132	1131	1129	1171	189	185	187	152	151	149	191	21455
21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455

Above two magic squares of order 35 formed by blocks of magic squares of order 7 are with distributions

$$D_{30\times 30} := \{1, 2, \ldots, 1224, 1225\}$$

Block-Wise Bordered and Pandiagonal Magic Squares Multiples of 7,
Zenodo, May 06, 2023, pp. 1-28, *https://doi.org/10.5281/zenodo.7903420*

2.3 Magic Squares of Order 28

These magic squares are obtained from above by the application of the formula $\frac{a^2-b^2}{2}$, $a > b$. Removing the external border of order 7 and then subtracting $\frac{42^2-28^2}{2} := 490$ from magic squares of orders 42, we get magic squares of order 28 given by

	pan	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990
10990	343	335	327	319	311	303	295	588	580	572	564	556	548	540	49	41	33	25	17	9	1	686	678	670	662	654	646	638	10990
10990	304	296	337	336	328	320	312	549	541	582	581	573	565	557	10	2	43	42	34	26	18	647	639	680	679	671	663	655	10990
10990	321	313	305	297	338	330	329	566	558	550	542	583	575	574	27	19	11	3	44	36	35	664	656	648	640	681	673	672	10990
10990	331	323	322	314	306	298	339	576	568	567	559	551	543	584	37	29	28	20	12	4	45	674	666	665	657	649	641	682	10990
10990	299	340	332	324	316	315	307	544	585	577	569	561	560	552	5	46	38	30	22	21	13	642	683	675	667	659	658	650	10990
10990	309	308	300	341	333	325	317	554	553	545	586	578	570	562	15	14	6	47	39	31	23	652	651	643	684	676	668	660	10990
10990	326	318	310	302	301	342	334	571	563	555	547	546	587	579	32	24	16	8	7	48	40	669	661	653	645	644	685	677	10990
10990	98	90	82	74	66	58	50	637	629	621	613	605	597	589	392	384	376	368	360	352	344	539	531	523	515	507	499	491	10990
10990	59	51	92	91	83	75	67	598	590	631	630	622	614	606	353	345	386	385	377	369	361	500	492	533	532	524	516	508	10990
10990	76	68	60	52	93	85	84	615	607	599	591	632	624	623	370	362	354	346	387	379	378	517	509	501	493	534	526	525	10990
10990	86	78	77	69	61	53	94	625	617	616	608	600	592	633	380	372	371	363	355	347	388	527	519	518	510	502	494	535	10990
10990	54	95	87	79	71	70	62	593	634	626	618	610	609	601	348	389	381	373	365	364	356	495	536	528	520	512	511	503	10990
10990	64	63	55	96	88	80	72	603	602	594	635	627	619	611	358	357	349	390	382	374	366	505	504	496	537	529	521	513	10990
10990	81	73	65	57	56	97	89	620	612	604	596	595	636	628	375	367	359	351	350	391	383	522	514	506	498	497	538	530	10990
10990	784	776	768	760	752	744	736	147	139	131	123	115	107	99	490	482	474	466	458	450	442	245	237	229	221	213	205	197	10990
10990	745	737	778	777	769	761	753	108	100	141	140	132	124	116	451	443	484	483	475	467	459	206	198	239	238	230	222	214	10990
10990	762	754	746	738	779	771	770	125	117	109	101	142	134	133	468	460	452	444	485	477	476	223	215	207	199	240	232	231	10990
10990	772	764	763	755	747	739	780	135	127	126	118	110	102	143	478	470	469	461	453	445	486	233	225	224	216	208	200	241	10990
10990	740	781	773	765	757	756	748	103	144	136	128	120	119	111	446	487	479	471	463	462	454	201	242	234	226	218	217	209	10990
10990	750	749	741	782	774	766	758	113	112	104	145	137	129	121	456	455	447	488	480	472	464	211	210	202	243	235	227	219	10990
10990	767	759	751	743	742	783	775	130	122	114	106	105	146	138	473	465	457	449	448	489	481	228	220	212	204	203	244	236	10990
10990	441	433	425	417	409	401	393	294	286	278	270	262	254	246	735	727	719	711	703	695	687	196	188	180	172	164	156	148	10990
10990	402	394	435	434	426	418	410	255	247	288	287	279	271	263	696	688	729	728	720	712	704	157	149	190	189	181	173	165	10990
10990	419	411	403	395	436	428	427	272	264	256	248	289	281	280	713	705	697	689	730	722	721	174	166	158	150	191	183	182	10990
10990	429	421	420	412	404	396	437	282	274	273	265	257	249	290	723	715	714	706	698	690	731	184	176	175	167	159	151	192	10990
10990	397	438	430	422	414	413	405	250	291	283	275	267	266	258	691	732	724	716	708	707	699	152	193	185	177	169	168	160	10990
10990	407	406	398	439	431	423	415	260	259	251	292	284	276	268	701	700	692	733	725	717	709	162	161	153	194	186	178	170	10990
	424	416	408	400	399	440	432	277	269	261	253	252	293	285	718	710	702	694	693	734	726	179	171	163	155	154	195	187	10990
28	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990

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28																												10990
300	306	304	339	340	342	302	545	551	549	584	585	587	547	6	12	10	45	46	48	8	643	649	647	682	683	685	645	10990
333	310	314	329	330	312	305	578	555	559	574	575	557	550	39	16	20	35	36	18	11	676	653	657	672	673	655	648	10990
335	325	316	323	318	313	303	580	570	561	568	563	558	548	41	31	22	29	24	19	9	678	668	659	666	661	656	646	10990
337	327	321	319	317	311	301	582	572	566	564	562	556	546	43	33	27	25	23	17	7	680	670	664	662	660	654	644	10990
297	307	320	315	322	331	341	542	552	565	560	567	576	586	3	13	26	21	28	37	47	640	650	663	658	665	674	684	10990
295	326	324	309	308	328	343	540	571	569	554	553	573	588	1	32	30	15	14	34	49	638	669	667	652	651	671	686	10990
336	332	334	299	298	296	338	581	577	579	544	543	541	583	42	38	40	5	4	2	44	679	675	677	642	641	639	681	10990
55	61	59	94	95	97	57	594	600	598	633	634	636	596	349	355	353	388	389	391	351	496	502	500	535	536	538	498	10990
88	65	69	84	85	67	60	627	604	608	623	624	606	599	382	359	363	378	379	361	354	529	506	510	525	526	508	501	10990
90	80	71	78	73	68	58	629	619	610	617	612	607	597	384	374	365	372	367	362	352	531	521	512	519	514	509	499	10990
92	82	76	74	72	66	56	631	621	615	613	611	605	595	386	376	370	368	366	360	350	533	523	517	515	513	507	497	10990
52	62	75	70	77	86	96	591	601	614	609	616	625	635	346	356	369	364	371	380	390	493	503	516	511	518	527	537	10990
50	81	79	64	63	83	98	589	620	618	603	602	622	637	344	375	373	358	357	377	392	491	522	520	505	504	524	539	10990
91	87	89	54	53	51	93	630	626	628	593	592	590	632	385	381	383	348	347	345	387	532	528	530	495	494	492	534	10990
741	747	745	780	781	783	743	104	110	108	143	144	146	106	447	453	451	486	487	489	449	202	208	206	241	242	244	204	10990
774	751	755	770	771	753	746	137	114	118	133	134	116	109	480	457	461	476	477	459	452	235	212	216	231	232	214	207	10990
776	766	757	764	759	754	744	139	129	120	127	122	117	107	482	472	463	470	465	460	450	237	227	218	225	220	215	205	10990
778	768	762	760	758	752	742	141	131	125	123	121	115	105	484	474	468	466	464	458	448	239	229	223	221	219	213	203	10990
738	748	761	756	763	772	782	101	111	124	119	126	135	145	444	454	467	462	469	478	488	199	209	222	217	224	233	243	10990
736	767	765	750	749	769	784	99	130	128	113	112	132	147	442	473	471	456	455	475	490	197	228	226	211	210	230	245	10990
777	773	775	740	739	737	779	140	136	138	103	102	100	142	483	479	481	446	445	443	485	238	234	236	201	200	198	240	10990
398	404	402	437	438	440	400	251	257	255	290	291	293	253	692	698	696	731	732	734	694	153	159	157	192	193	195	155	10990
431	408	412	427	428	410	403	284	261	265	280	281	263	256	725	702	706	721	722	704	697	186	163	167	182	183	165	158	10990
433	423	414	421	416	411	401	286	276	267	274	269	264	254	727	717	708	715	710	705	695	188	178	169	176	171	166	156	10990
435	425	419	417	415	409	399	288	278	272	270	268	262	252	729	719	713	711	709	703	693	190	180	174	172	170	164	154	10990
395	405	418	413	420	429	439	248	258	271	266	273	282	292	689	699	712	707	714	723	733	150	160	173	168	175	184	194	10990
393	424	422	407	406	426	441	246	277	275	260	259	279	294	687	718	716	701	700	720	735	148	179	177	162	161	181	196	10990
434	430	432	397	396	394	436	287	283	285	250	249	247	289	728	724	726	691	690	688	730	189	185	187	152	151	149	191	10990
10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990

Above two magic squares of order 28 formed by blocks of magic squares of order 7 are with sequential entries:

$$D_{25\times 25} := \{1, 2, \ldots, 783, 784\}$$

2.4 Magic Squares of Order 21

These magic squares are obtained from above by the application of the formula $\frac{a^2-b^2}{2}$, $a > b$. Removing the external border of order 7 and then subtracting $\frac{35^2-21^2}{2} := 392$ from magic squares of orders 35, we get magic squares of order 21 given by

21																					4641
392	384	376	368	360	352	344	49	41	33	25	17	9	1	294	286	278	270	262	254	246	4641
353	345	386	385	377	369	361	10	2	43	42	34	26	18	255	247	288	287	279	271	263	4641
370	362	354	346	387	379	378	27	19	11	3	44	36	35	272	264	256	248	289	281	280	4641
380	372	371	363	355	347	388	37	29	28	20	12	4	45	282	274	273	265	257	249	290	4641
348	389	381	373	365	364	356	5	46	38	30	22	21	13	250	291	283	275	267	266	258	4641
358	357	349	390	382	374	366	15	14	6	47	39	31	23	260	259	251	292	284	276	268	4641
375	367	359	351	350	391	383	32	24	16	8	7	48	40	277	269	261	253	252	293	285	4641
147	139	131	123	115	107	99	245	237	229	221	213	205	197	343	335	327	319	311	303	295	4641
108	100	141	140	132	124	116	206	198	239	238	230	222	214	304	296	337	336	328	320	312	4641
125	117	109	101	142	134	133	223	215	207	199	240	232	231	321	313	305	297	338	330	329	4641
135	127	126	118	110	102	143	233	225	224	216	208	200	241	331	323	322	314	306	298	339	4641
103	144	136	128	120	119	111	201	242	234	226	218	217	209	299	340	332	324	316	315	307	4641
113	112	104	145	137	129	121	211	210	202	243	235	227	219	309	308	300	341	333	325	317	4641
130	122	114	106	105	146	138	228	220	212	204	203	244	236	326	318	310	302	301	342	334	4641
196	188	180	172	164	156	148	441	433	425	417	409	401	393	98	90	82	74	66	58	50	4641
157	149	190	189	181	173	165	402	394	435	434	426	418	410	59	51	92	91	83	75	67	4641
174	166	158	150	191	183	182	419	411	403	395	436	428	427	76	68	60	52	93	85	84	4641
184	176	175	167	159	151	192	429	421	420	412	404	396	437	86	78	77	69	61	53	94	4641
152	193	185	177	169	168	160	397	438	430	422	414	413	405	54	95	87	79	71	70	62	4641
162	161	153	194	186	178	170	407	406	398	439	431	423	415	64	63	55	96	88	80	72	4641
179	171	163	155	154	195	187	424	416	408	400	399	440	432	81	73	65	57	56	97	89	4641
4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641

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21																					4641
349	355	353	388	389	391	351	6	12	10	45	46	48	8	251	257	255	290	291	293	253	4641
382	359	363	378	379	361	354	39	16	20	35	36	18	11	284	261	265	280	281	263	256	4641
384	374	365	372	367	362	352	41	31	22	29	24	19	9	286	276	267	274	269	264	254	4641
386	376	370	368	366	360	350	43	33	27	25	23	17	7	288	278	272	270	268	262	252	4641
346	356	369	364	371	380	390	3	13	26	21	28	37	47	248	258	271	266	273	282	292	4641
344	375	373	358	357	377	392	1	32	30	15	14	34	49	246	277	275	260	259	279	294	4641
385	381	383	348	347	345	387	42	38	40	5	4	2	44	287	283	285	250	249	247	289	4641
104	110	108	143	144	146	106	202	208	206	241	242	244	204	300	306	304	339	340	342	302	4641
137	114	118	133	134	116	109	235	212	216	231	232	214	207	333	310	314	329	330	312	305	4641
139	129	120	127	122	117	107	237	227	218	225	220	215	205	335	325	316	323	318	313	303	4641
141	131	125	123	121	115	105	239	229	223	221	219	213	203	337	327	321	319	317	311	301	4641
101	111	124	119	126	135	145	199	209	222	217	224	233	243	297	307	320	315	322	331	341	4641
99	130	128	113	112	132	147	197	228	226	211	210	230	245	295	326	324	309	308	328	343	4641
140	136	138	103	102	100	142	238	234	236	201	200	198	240	336	332	334	299	298	296	338	4641
153	159	157	192	193	195	155	398	404	402	437	438	440	400	55	61	59	94	95	97	57	4641
186	163	167	182	183	165	158	431	408	412	427	428	410	403	88	65	69	84	85	67	60	4641
188	178	169	176	171	166	156	433	423	414	421	416	411	401	90	80	71	78	73	68	58	4641
190	180	174	172	170	164	154	435	425	419	417	415	409	399	92	82	76	74	72	66	56	4641
150	160	173	168	175	184	194	395	405	418	413	420	429	439	52	62	75	70	77	86	96	4641
148	179	177	162	161	181	196	393	424	422	407	406	426	441	50	81	79	64	63	83	98	4641
189	185	187	152	151	149	191	434	430	432	397	396	394	436	91	87	89	54	53	51	93	4641
4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641

Above two magic squares of order 21 formed by blocks of magic squares of order 7 are with sequential entries:

$$D_{20\times 20} := \{1, 2, \ldots, 440, 441\}$$

3 Pandiagonal Magic Squares Multiples 7

This section brings pandiagonal magic squares multiples 7. It includes magic squares of orders 21, 28, 35 and 49. The details are excluded as these are studied extensively in author's previous works [5, 7, 20].

3.1 Pandiagonal Magic Square of Order 21

Below is a **pandiagonal** magic squares of order 21.

	pan	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641
4641	1	111	155	243	265	375	397	3	110	154	242	266	374	398	2	109	156	241	267	373	399	4641
4641	370	396	19	106	153	239	264	371	395	20	108	152	238	263	372	394	21	107	151	240	262	4641
4641	237	260	369	391	18	124	148	236	259	368	392	17	125	150	235	261	367	393	16	126	149	4641
4641	123	166	232	258	365	390	13	122	167	234	257	364	389	14	121	168	233	256	366	388	15	4641
4641	386	12	118	165	250	253	363	385	11	119	164	251	255	362	387	10	120	163	252	254	361	4641
4641	271	358	384	8	117	160	249	272	360	383	7	116	161	248	273	359	382	9	115	162	247	4641
4641	159	244	270	376	379	6	113	158	245	269	377	381	5	112	157	246	268	378	380	4	114	4641
4641	43	90	134	222	286	354	418	45	89	133	221	287	353	419	44	88	135	220	288	352	420	4641
4641	349	417	61	85	132	218	285	350	416	62	87	131	217	284	351	415	63	86	130	219	283	4641
4641	216	281	348	412	60	103	127	215	280	347	413	59	104	129	214	282	346	414	58	105	128	4641
4641	102	145	211	279	344	411	55	101	146	213	278	343	410	56	100	147	212	277	345	409	57	4641
4641	407	54	97	144	229	274	342	406	53	98	143	230	276	341	408	52	99	142	231	275	340	4641
4641	292	337	405	50	96	139	228	293	339	404	49	95	140	227	294	338	403	51	94	141	226	4641
4641	138	223	291	355	400	48	92	137	224	290	356	402	47	91	136	225	289	357	401	46	93	4641
4641	22	69	176	201	307	333	439	24	68	175	200	308	332	440	23	67	177	199	309	331	441	4641
4641	328	438	40	64	174	197	306	329	437	41	66	173	196	305	330	436	42	65	172	198	304	4641
4641	195	302	327	433	39	82	169	194	301	326	434	38	83	171	193	303	325	435	37	84	170	4641
4641	81	187	190	300	323	432	34	80	188	192	299	322	431	35	79	189	191	298	324	430	36	4641
4641	428	33	76	186	208	295	321	427	32	77	185	209	297	320	429	31	78	184	210	296	319	4641
4641	313	316	426	29	75	181	207	314	318	425	28	74	182	206	315	317	424	30	73	183	205	4641
	180	202	312	334	421	27	71	179	203	311	335	423	26	70	178	204	310	336	422	25	72	4641
	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641	4641

The blocks of order 7 are of **equal sums** magic squares, i.e., $M_{7\times7} := 1547$

3.2 Pandiagonal Magic Square of Order 28

Below is a **pandiagonal** magic squares of order 28.

	pan	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990
10990	343	335	327	319	311	303	295	588	580	572	564	556	548	540	49	41	33	25	17	9	1	686	678	670	662	654	646	638	10990
10990	304	296	337	336	328	320	312	549	541	582	581	573	565	557	10	2	43	42	34	26	18	647	639	680	679	671	663	655	10990
10990	321	313	305	297	338	330	329	566	558	550	542	583	575	574	27	19	11	3	44	36	35	664	656	648	640	681	673	672	10990
10990	331	323	322	314	306	298	339	576	568	567	559	551	543	584	37	29	28	20	12	4	45	674	666	665	657	649	641	682	10990
10990	299	340	332	324	316	315	307	544	585	577	569	561	560	552	5	46	38	30	22	21	13	642	683	675	667	659	658	650	10990
10990	309	308	300	341	333	325	317	554	553	545	586	578	570	562	15	14	6	47	39	31	23	652	651	643	684	676	668	660	10990
10990	326	318	310	302	301	342	334	571	563	555	547	546	587	579	32	24	16	8	7	48	40	669	661	653	645	644	685	677	10990
10990	98	90	82	74	66	58	50	637	629	621	613	605	597	589	392	384	376	368	360	352	344	539	531	523	515	507	499	491	10990
10990	59	51	92	91	83	75	67	598	590	631	630	622	614	606	353	345	386	385	377	369	361	500	492	533	532	524	516	508	10990
10990	76	68	60	52	93	85	84	615	607	599	591	632	624	623	370	362	354	346	387	379	378	517	509	501	493	534	526	525	10990
10990	86	78	77	69	61	53	94	625	617	616	608	600	592	633	380	372	371	363	355	347	388	527	519	518	510	502	494	535	10990
10990	54	95	87	79	71	70	62	593	634	626	618	610	609	601	348	389	381	373	365	364	356	495	536	528	520	512	511	503	10990
10990	64	63	55	96	88	80	72	603	602	594	635	627	619	611	358	357	349	390	382	374	366	505	504	496	537	529	521	513	10990
10990	81	73	65	57	56	97	89	620	612	604	596	595	636	628	375	367	359	351	350	391	383	522	514	506	498	497	538	530	10990
10990	784	776	768	760	752	744	736	147	139	131	123	115	107	99	490	482	474	466	458	450	442	245	237	229	221	213	205	197	10990
10990	745	737	778	777	769	761	753	108	100	141	140	132	124	116	451	443	484	483	475	467	459	206	198	239	238	230	222	214	10990
10990	762	754	746	738	779	771	770	125	117	109	101	142	134	133	468	460	452	444	485	477	476	223	215	207	199	240	232	231	10990
10990	772	764	763	755	747	739	780	135	127	126	118	110	102	143	478	470	469	461	453	445	486	233	225	224	216	208	200	241	10990
10990	740	781	773	765	757	756	748	103	144	136	128	120	119	111	446	487	479	471	463	462	454	201	242	234	226	218	217	209	10990
10990	750	749	741	782	774	766	758	113	112	104	145	137	129	121	456	455	447	488	480	472	464	211	210	202	243	235	227	219	10990
10990	767	759	751	743	742	783	775	130	122	114	106	105	146	138	473	465	457	449	448	489	481	228	220	212	204	203	244	236	10990
10990	441	433	425	417	409	401	393	294	286	278	270	262	254	246	735	727	719	711	703	695	687	196	188	180	172	164	156	148	10990
10990	402	394	435	434	426	418	410	255	247	288	287	279	271	263	696	688	729	728	720	712	704	157	149	190	189	181	173	165	10990
10990	419	411	403	395	436	428	427	272	264	256	248	289	281	280	713	705	697	689	730	722	721	174	166	158	150	191	183	182	10990
10990	429	421	420	412	404	396	437	282	274	273	265	257	249	290	723	715	714	706	698	690	731	184	176	175	167	159	151	192	10990
10990	397	438	430	422	414	413	405	250	291	283	275	267	266	258	691	732	724	716	708	707	699	152	193	185	177	169	168	160	10990
10990	407	406	398	439	431	423	415	260	259	251	292	284	276	268	701	700	692	733	725	717	709	162	161	153	194	186	178	170	10990
	424	416	408	400	399	440	432	277	269	261	253	252	293	285	718	710	702	694	693	734	726	179	171	163	155	154	195	187	10990
28	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990	10990

The blocks of order 7 are with **different sums** pandiagonal magic squares. It is the same magic square given in previous section.

3.3 Pandiagonal Magic Square of Order 35

Below is a **pandiagonal** magic squares of order 35.

	pan	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455
21455	901	649	253	1081	865	433	109	685	181	1189	829	469	1	937	73	217	505	613	721	1009	1153	289	1225	757	397	37	1045	541	1117	793	361	145	973	577	325	21455
21455	445	118	879	656	264	1058	871	14	911	692	195	1161	839	479	1001	1149	103	213	497	610	718	1017	555	296	1199	770	407	47	588	332	1095	802	373	151	950	21455
21455	1069	848	451	130	888	634	271	811	489	24	924	666	202	1175	602	715	998	1141	99	243	493	420	57	1027	527	310	1206	744	163	956	565	343	1102	780	382	21455
21455	643	249	1076	859	428	136	900	176	1182	825	461	34	934	679	239	523	598	707	995	1138	91	1220	751	394	70	1037	537	282	787	360	172	968	571	320	1113	21455
21455	113	906	655	258	1054	866	439	944	689	189	1156	832	475	6	1135	88	231	519	628	703	987	547	292	1192	765	401	44	1050	326	1090	798	367	150	977	583	21455
21455	844	446	124	883	661	270	1063	482	20	916	699	199	1169	806	733	983	1127	85	228	511	624	51	1024	560	302	1202	737	415	955	592	338	1096	775	378	157	21455
21455	276	1075	853	424	131	894	638	1179	819	456	27	930	671	209	508	616	729	1013	1123	77	225	747	387	65	1031	534	315	1212	355	168	962	570	347	1108	781	21455
21455	283	1197	750	403	56	1044	558	1094	805	372	152	947	590	331	907	653	256	1055	868	437	115	691	194	1163	836	480	13	914	90	216	524	619	714	981	1147	21455
21455	1036	554	313	1193	742	400	53	562	345	1101	779	385	162	957	448	122	885	662	268	1061	845	25	923	669	201	1174	813	486	994	1121	97	230	496	629	724	21455
21455	392	50	1033	546	309	1223	738	175	967	572	317	1115	786	359	1073	851	425	133	892	640	277	824	463	31	935	678	179	1181	601	734	1004	1134	71	237	510	21455
21455	1219	768	388	42	1030	543	301	800	366	149	980	582	327	1087	647	255	1082	863	431	110	903	188	1159	831	474	8	941	690	211	517	615	706	1014	1144	84	21455
21455	540	298	1211	764	418	38	1022	337	1097	772	380	156	954	595	116	880	658	262	1060	872	443	918	696	200	1168	809	481	19	1154	94	224	491	622	720	986	21455
21455	68	1018	532	295	1208	756	414	961	569	350	1107	782	352	170	850	452	128	886	635	273	1067	459	26	929	673	206	1180	818	727	1000	1126	104	234	504	596	21455
21455	753	406	64	1048	528	287	1205	362	142	975	576	324	1120	792	250	1078	857	430	137	898	641	1186	830	468	4	936	684	183	514	609	701	1007	1140	76	244	21455
21455	697	198	1166	810	483	17	920	96	229	498	626	725	993	1124	300	1196	769	409	49	1016	552	1088	777	365	158	966	589	348	884	665	267	1062	842	450	121	21455
21455	28	927	675	207	1178	816	460	1005	1133	74	236	509	603	731	1029	526	307	1210	741	419	59	581	344	1118	773	357	155	963	422	135	891	639	280	1072	852	21455
21455	828	466	5	938	682	185	1187	614	708	1011	1145	83	214	516	391	69	1039	539	281	1217	755	147	960	578	336	1114	803	353	1085	862	432	107	905	646	254	21455
21455	192	1165	837	478	11	915	693	223	494	621	719	988	1151	95	1191	762	405	41	1049	549	294	799	383	143	952	575	333	1106	660	261	1059	875	442	117	877	21455
21455	921	670	203	1172	815	487	23	1128	101	235	503	599	726	999	559	304	1204	736	412	55	1021	330	1103	791	379	173	948	567	127	887	632	275	1066	849	455	21455
21455	465	32	933	676	180	1183	822	704	1006	1139	78	241	515	608	62	1035	531	314	1214	749	386	978	563	322	1100	788	371	169	856	429	140	897	642	247	1080	21455
21455	1160	833	472	10	942	688	186	521	620	713	984	1146	89	218	759	399	36	1042	545	286	1224	368	161	974	593	318	1092	785	257	1052	870	436	114	910	652	21455
21455	1105	776	384	164	959	561	342	878	637	260	1068	861	449	138	674	210	1177	817	457	30	926	102	233	501	600	728	997	1130	306	1209	743	416	60	1028	529	21455
21455	574	316	1112	790	356	174	969	441	134	908	633	252	1065	858	2	940	681	184	1190	827	467	1008	1137	80	242	513	606	705	1040	538	284	1216	754	393	66	21455
21455	146	979	584	329	1086	797	370	1057	855	438	126	904	663	248	840	477	12	912	695	191	1164	618	711	985	1148	87	220	522	404	43	1046	550	293	1194	761	21455
21455	771	377	160	951	594	339	1099	659	278	1053	847	435	123	896	205	1171	814	490	22	922	667	227	500	627	723	991	1125	98	1203	739	411	54	1023	556	305	21455
21455	349	1109	784	351	167	965	566	120	893	651	274	1083	843	427	932	677	177	1185	821	464	35	1131	75	238	507	605	732	1003	533	311	1215	748	389	61	1034	21455
21455	972	580	321	1119	794	364	141	873	423	112	890	648	266	1079	471	9	945	687	187	1157	835	710	1012	1143	81	215	518	612	39	1041	544	288	1221	760	398	21455
21455	374	154	946	587	335	1091	804	263	1071	869	453	108	882	645	1167	807	485	16	919	700	197	495	623	717	990	1152	93	221	766	410	48	1019	551	299	1198	21455
21455	79	245	512	607	702	1010	1136	312	1213	746	390	63	1032	535	1111	789	358	171	970	573	319	895	636	279	1074	854	421	132	668	182	1170	823	476	29	943	21455
21455	982	1150	86	219	525	617	712	1043	542	290	1222	758	396	40	585	328	1089	796	369	148	976	434	106	902	650	251	1084	864	21	939	698	178	1162	820	473	21455
21455	630	722	992	1122	100	226	499	408	46	1020	553	297	1200	767	159	953	591	340	1098	774	376	1056	874	444	119	876	657	265	812	470	18	931	694	208	1158	21455
21455	240	506	604	735	1002	1132	72	1207	745	417	58	1026	530	308	783	354	166	964	568	346	1110	631	272	1070	846	454	129	889	204	1188	808	462	15	928	686	21455
21455	1142	82	212	520	611	709	1015	536	285	1218	752	395	67	1038	323	1116	795	363	144	971	579	139	899	644	246	1077	860	426	925	683	196	1184	838	458	7	21455
21455	716	989	1155	92	222	492	625	45	1047	548	291	1195	763	402	949	586	334	1093	801	375	153	867	440	111	909	654	259	1051	488	3	917	680	193	1176	834	21455
	502	597	730	996	1129	105	232	740	413	52	1025	557	303	1201	381	165	958	564	341	1104	778	269	1064	841	447	125	881	664	1173	826	484	33	913	672	190	21455
	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455	21455

The blocks of order 7 are **equal sums pandiagonal** magic squares, i.e., $M_{7\times 7} := 4291$.

It is constructed based on magic rectangle of order 5×7. blocks of order 5 given in previous work [30] is also constructed with same procedures. See the author's work [20].

3.4 Pandiagonal Magic Square of Order 49

Below is a **pandiagonal** magic squares of order 49.

mgc			94219307	94209703	94202843	94222737	94202157	94213133	94217249	94211075	94202843	94221365	94204215	94213819	94216563	94217249	94207645	94229597	94206273	94219307	94220679	94219993	94217249	94237829	94217935	94224795	94229597	94232341	94228225	94217249	94195983	94206273	94214505	94211075	94210389	94198041	94217249	94226167	94233027	94233027	94226167	94217249	94235085	94217249	94222737	94221365	94217935	94207645	94224109	94209703	94217249
	pan	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	
58849	1	401	801	1201	1601	2001	2401	334	391	742	1135	1535	1935	2335	268	668	725	1125	1476	1876	2269	209	609	1002	1059	1459	1859	2210	192	543	943	1343	1400	1793	2193	133	526	926	1277	1677	1734	2134	67	467	867	1267	1660	2011	2068	58849	94217249
58849	1993	2393	49	393	793	1193	1593	1927	2327	326	383	783	1134	1527	1868	2268	260	660	717	1117	1517	1851	2251	201	601	1001	1051	1451	1792	2185	184	584	935	1335	1392	1726	2126	125	525	918	1318	1669	2052	2060	59	459	859	1259	1659	58849	94217249
58849	1185	1585	1985	2385	41	441	785	1175	1526	1919	2319	318	375	775	1109	1509	1909	2260	259	652	709	1050	1443	1843	2243	242	593	993	1327	1384	1784	2184	176	576	976	1310	1710	1718	2118	117	517	917	1251	1651	2051	2101	51	451	851	58849	94217249
58849	433	833	1177	1577	1977	2377	33	367	767	1167	1567	1918	2311	310	651	701	1101	1501	1901	2301	251	634	985	1042	1442	1835	2235	234	568	968	1368	1376	1776	2176	175	509	909	1309	1702	1759	2110	109	443	843	1243	1643	2043	2100	92	58849	94217249
58849	2369	25	425	825	1225	1569	1969	2310	302	359	759	1159	1559	1959	2293	292	643	700	1093	1493	1893	2227	226	626	1026	1034	1434	1834	2168	167	567	960	1360	1417	1768	2151	101	501	901	1301	1701	1751	2092	91	484	835	1235	1635	2035	58849	94217249
58849	1617	1961	2361	17	417	817	1217	1551	1951	2351	301	351	751	1151	1485	1885	2285	284	684	692	1092	1426	1826	2226	218	618	1018	1075	1409	1809	2160	159	559	959	1352	1693	1750	2143	142	493	893	1293	1627	2027	2084	83	483	876	1227	58849	94217249
58849	809	1209	1609	2009	2353	9	409	743	1143	1543	1943	2343	342	350	733	1084	1484	1877	2277	276	676	1010	1067	1467	1818	2218	217	610	951	1351	1401	1801	2201	151	551	885	1285	1685	1742	2142	134	534	875	1268	1619	2019	2076	75	475	58849	94217249
58849	143	494	894	1294	1694	1744	2144	84	477	877	1228	1628	2028	2085	18	418	818	1218	1611	1962	2362	295	352	752	1152	1552	1952	2352	285	685	693	1086	1486	1886	2286	219	619	1019	1076	1427	1827	2220	160	560	953	1353	1410	1810	2161	58849	94217249
58849	1743	2136	135	535	886	1286	1686	2020	2077	76	476	869	1269	1620	2003	2354	10	410	810	1210	1610	1944	2344	343	344	744	1144	1544	1878	2278	277	677	734	1085	1478	1819	2219	211	611	1011	1068	1468	1802	2202	152	552	952	1345	1402	58849	94217249
58849	1278	1678	1735	2135	127	527	927	1261	1661	2012	2069	68	468	868	1202	1602	2002	2395	2	402	802	1136	1536	1936	2336	335	392	736	1126	1477	1870	2270	269	669	726	1060	1460	1860	2211	210	603	1003	1344	1394	1794	2194	193	544	944	58849	94217249
58849	519	919	1319	1670	1727	2127	126	460	860	1260	1653	2053	2061	60	394	794	1194	1594	1994	2394	43	384	784	1128	1528	1928	2328	327	661	718	1118	1518	1869	2262	261	602	995	1052	1452	1852	2252	202	585	936	1336	1393	1786	2186	185	58849	94217249
58849	2119	118	518	911	1311	1711	1719	2102	52	452	852	1252	1652	2045	2386	42	435	786	1186	1586	1986	2320	319	376	776	1176	1520	1920	2261	253	653	710	1110	1510	1910	2244	243	594	994	1044	1444	1844	2178	177	577	977	1328	1385	1785	58849	94217249
58849	1703	1760	2111	110	510	910	1303	1644	2044	2094	93	444	844	1244	1578	1978	2378	34	434	827	1178	1568	1912	2312	311	368	768	1168	1502	1902	2302	252	645	702	1102	1436	1836	2236	235	635	986	1043	1377	1777	2177	169	569	969	1369	58849	94217249
58849	902	1302	1695	1752	2152	102	502	836	1236	1636	2036	2093	85	485	826	1219	1570	1970	2370	26	426	760	1160	1560	1960	2304	303	360	694	1094	1494	1894	2294	293	644	1027	1035	1435	1828	2228	227	627	961	1361	1418	1769	2169	168	561	58849	94217249
58849	236	636	987	1037	1437	1837	2237	170	570	970	1370	1378	1778	2171	111	511	904	1304	1704	1761	2112	94	445	845	1245	1645	2038	2095	35	428	828	1179	1579	1979	2379	312	369	769	1169	1562	1913	2313	246	646	703	1103	1503	1903	2303	58849	94217249
58849	1829	2229	228	628	1028	1036	1429	1770	2170	162	562	962	1362	1419	1753	2153	103	503	903	1296	1696	2037	2087	86	486	837	1237	1637	1971	2371	27	427	820	1220	1571	1954	2305	304	361	761	1161	1561	1895	2295	294	638	695	1095	1495	58849	94217249
58849	1077	1428	1821	2221	220	620	1020	1354	1411	1811	2162	161	554	954	1295	1688	1745	2145	144	495	895	1229	1629	2029	2086	78	478	878	1212	1612	1963	2363	19	419	819	1153	1553	1953	2346	296	353	753	1087	1487	1887	2287	286	686	687	58849	94217249
58849	612	1012	1069	1469	1820	2213	212	553	946	1346	1403	1803	2203	153	536	887	1287	1687	1737	2137	136	470	870	1270	1621	2021	2078	77	411	811	1211	1604	2004	2355	11	345	745	1145	1545	1945	2345	337	678	735	1079	1479	1879	2279	278	58849	94217249
58849	2212	204	604	1004	1061	1461	1861	2195	194	545	945	1338	1395	1795	2129	128	528	928	1279	1679	1736	2070	69	469	862	1262	1662	2013	2396	3	403	803	1203	1603	1996	2337	336	386	737	1137	1537	1937	2271	270	670	727	1127	1471	1871	58849	94217249
58849	1453	1853	2253	203	596	996	1053	1387	1787	2187	186	586	937	1337	1671	1728	2128	120	520	920	1320	1654	2054	2062	61	461	861	1254	1595	1995	2388	44	395	795	1195	1529	1929	2329	328	385	778	1129	1519	1863	2263	262	662	719	1119	58849	94217249
58849	988	1045	1445	1845	2245	244	595	978	1329	1386	1779	2179	178	578	912	1312	1712	1720	2120	119	512	853	1253	1646	2046	2103	53	453	787	1187	1587	1987	2387	36	436	777	1170	1521	1921	2321	320	377	711	1111	1511	1911	2255	254	654	58849	94217249
58849	329	379	779	1130	1530	1930	2330	263	663	720	1120	1513	1864	2264	197	597	997	1054	1454	1854	2254	187	587	938	1331	1388	1788	2188	121	521	921	1321	1672	1729	2122	62	462	855	1255	1655	2055	2063	45	396	796	1196	1596	1989	2389	58849	94217249
58849	1922	2322	321	378	771	1171	1522	1905	2256	255	655	712	1112	1512	1846	2246	245	589	989	1046	1446	1780	2180	179	579	979	1330	1380	1721	2121	113	513	913	1313	1713	2047	2104	54	454	854	1247	1647	1988	2381	37	437	788	1188	1588	58849	94217249
58849	1163	1563	1914	2314	313	370	770	1104	1504	1904	2297	247	647	704	1038	1438	1838	2238	237	637	981	1371	1379	1772	2172	171	571	971	1305	1705	1762	2113	112	505	905	1246	1639	2039	2096	95	446	846	1180	1580	1980	2380	29	429	829	58849	94217249
58849	362	762	1162	1555	1955	2306	305	639	696	1096	1496	1896	2296	288	629	1029	1030	1430	1830	2230	229	563	963	1363	1420	1771	2164	163	504	897	1297	1697	1754	2154	104	487	838	1238	1638	2031	2088	87	421	821	1221	1572	1972	2372	28	58849	94217249
58849	2347	297	354	754	1154	1554	1947	2288	287	680	688	1088	1488	1888	2222	221	621	1021	1078	1422	1822	2163	155	555	955	1355	1412	1812	2146	145	496	896	1289	1689	1746	2080	79	479	879	1230	1630	2030	2364	20	420	813	1213	1613	1964	58849	94217249
58849	1546	1946	2339	338	346	746	1146	1480	1880	2280	279	679	729	1080	1470	1814	2214	213	613	1013	1070	1404	1804	2204	154	547	947	1347	1681	1738	2138	137	537	888	1288	1622	2022	2079	71	471	871	1271	1605	2005	2356	12	412	812	1205	58849	94217249
58849	738	1138	1538	1938	2338	330	387	728	1121	1472	1872	2272	271	671	1005	1062	1462	1862	2206	205	605	939	1339	1396	1796	2196	195	546	929	1280	1680	1730	2130	129	529	863	1263	1663	2014	2071	70	463	804	1204	1597	1997	2397	4	404	58849	94217249
58849	72	472	872	1272	1623	2023	2073	13	413	806	1206	1606	2006	2357	339	347	747	1147	1547	1940	2340	280	673	730	1081	1481	1881	2281	214	614	1014	1071	1464	1815	2215	148	548	948	1348	1405	1805	2205	138	538	889	1282	1682	1739	2139	58849	94217249
58849	2015	2072	64	464	864	1264	1664	1998	2398	5	405	805	1198	1598	1939	2332	331	388	739	1139	1539	1873	2273	272	672	722	1122	1473	1856	2207	206	606	1006	1063	1463	1797	2197	196	540	940	1340	1397	1731	2131	130	530	930	1281	1674	58849	94217249
58849	1256	1656	2056	2064	63	456	856	1197	1590	1990	2390	46	397	797	1131	1531	1931	2331	323	380	780	1114	1514	1865	2265	264	664	721	1055	1455	1855	2248	198	598	998	1332	1389	1789	2189	188	588	932	1322	1673	1723	2123	122	522	922	58849	94217249
58849	455	848	1248	1648	2048	2105	55	438	789	1189	1589	1982	2382	38	372	772	1172	1523	1923	2323	322	656	713	1113	1506	1906	2257	256	590	990	1047	1447	1847	2247	239	580	980	1324	1381	1781	2181	180	514	914	1314	1714	1722	2115	114	58849	94217249
58849	2097	96	447	847	1240	1640	2040	2374	30	430	830	1181	1581	1981	2315	314	371	764	1164	1564	1915	2298	248	648	705	1105	1505	1898	2239	238	631	982	1039	1439	1839	2173	172	572	972	1372	1373	1773	2114	106	506	906	1306	1706	1763	58849	94217249
58849	1632	2032	2089	88	488	839	1239	1573	1973	2373	22	422	822	1222	1556	1956	2307	306	363	763	1156	1497	1897	2290	289	640	697	1097	1431	1831	2231	230	630	1023	1031	1421	1765	2165	164	564	964	1364	1698	1755	2155	105	498	898	1298	58849	94217249
58849	880	1231	1631	2024	2081	80	480	814	1214	1614	1965	2365	21	414	755	1155	1548	1948	2348	298	355	689	1089	1489	1889	2289	281	681	1022	1072	1423	1823	2223	222	622	956	1356	1413	1813	2157	156	556	890	1290	1690	1747	2147	146	497	58849	94217249
58849	165	565	965	1365	1415	1766	2166	99	499	899	1299	1699	1756	2156	89	489	840	1233	1633	2033	2090	23	423	823	1223	1574	1974	2367	307	364	757	1157	1557	1957	2308	290	641	698	1098	1498	1891	2291	231	624	1024	1032	1432	1832	2232	58849	94217249
58849	1807	2158	157	557	957	1357	1414	1748	2148	147	491	891	1291	1691	2025	2082	81	481	881	1232	1625	1966	2366	15	415	815	1215	1615	1949	2349	299	356	756	1149	1549	1890	2283	282	682	690	1090	1490	1824	2224	223	623	1016	1073	1424	58849	94217249
58849	1349	1406	1806	2199	149	549	949	1283	1683	1740	2140	139	539	883	1273	1624	2017	2074	73	473	873	1207	1607	2007	2358	14	407	807	1148	1541	1941	2341	340	348	748	1082	1482	1882	2282	274	674	731	1065	1465	1816	2216	215	615	1015	58849	94217249
58849	541	941	1341	1398	1798	2198	190	531	931	1275	1675	1732	2132	131	465	865	1265	1665	2016	2066	65	406	799	1199	1599	1999	2399	6	389	740	1140	1540	1933	2333	332	666	723	1123	1474	1874	2274	273	607	1007	1064	1457	1857	2208	207	58849	94217249
58849	2190	189	582	933	1333	1390	1790	2124	123	523	923	1323	1667	1724	2065	57	457	857	1257	1657	2057	2391	47	398	798	1191	1591	1991	2325	324	381	781	1132	1532	1932	2266	265	665	715	1115	1515	1866	2249	199	599	999	1056	1456	1849	58849	94217249
58849	1382	1782	2182	181	581	974	1325	1715	1716	2116	115	515	915	1315	1649	2049	2106	56	449	849	1249	1583	1983	2383	39	439	790	1190	1524	1924	2324	316	373	773	1173	1507	1907	2258	257	657	714	1107	1448	1848	2241	240	591	991	1048	58849	94217249
58849	973	1366	1374	1774	2174	173	573	907	1307	1707	1764	2108	107	507	841	1241	1641	2041	2098	97	448	831	1182	1582	1975	2375	31	431	765	1165	1565	1916	2316	315	365	706	1106	1499	1899	2299	249	649	983	1040	1440	1840	2240	232	632	58849	94217249
58849	258	658	708	1108	1508	1908	2259	241	592	992	1049	1449	1842	2242	182	575	975	1326	1383	1783	2183	116	516	916	1316	1709	1717	2117	50	450	850	1250	1650	2050	2107	40	440	791	1184	1584	1984	2384	317	374	774	1174	1525	1925	2318	58849	94217249
58849	1900	2300	250	650	707	1100	1500	1841	2234	233	633	984	1041	1441	1775	2175	174	574	967	1367	1375	1758	2109	108	508	908	1308	1708	2042	2099	98	442	842	1242	1642	1976	2376	32	432	832	1183	1576	1917	2317	309	366	766	1166	1566	58849	94217249
58849	1099	1492	1892	2292	291	642	699	1033	1433	1833	2233	225	625	1025	1359	1416	1767	2167	166	566	966	1300	1700	1757	2150	100	500	900	1234	1634	2034	2091	90	490	834	1224	1575	1968	2368	24	424	824	1158	1558	1958	2309	308	358	758	58849	94217249
58849	683	691	1091	1491	1884	2284	283	617	1017	1074	1425	1825	2225	224	558	958	1358	1408	1808	2159	158	492	892	1292	1692	1749	2149	141	482	882	1226	1626	2026	2083	82	416	816	1216	1616	1967	2360	16	357	750	1150	1550	1950	2350	300	58849	94217249
58849	2276	275	675	732	1083	1483	1883	2217	216	616	1009	1066	1466	1817	2200	150	550	950	1350	1407	1800	2141	140	533	884	1284	1684	1741	2075	74	474	874	1274	1618	2018	2359	8	408	808	1208	1608	2008	2342	341	349	749	1142	1542	1942	58849	94217249
58849	1475	1875	2275	267	667	724	1124	1458	1858	2209	208	608	1008	1058	1399	1799	2192	191	542	942	1342	1676	1733	2133	132	532	925	1276	1666	2010	2067	66	466	866	1266	1600	2000	2400	7	400	800	1200	1534	1934	2334	333	390	741	1141	58849	94217249
	716	1116	1516	1867	2267	266	659	1000	1057	1450	1850	2250	200	600	934	1334	1391	1791	2191	183	583	924	1317	1668	1725	2125	124	524	858	1258	1658	2058	2059	58	458	792	1192	1592	1992	2392	48	399	782	1133	1533	1926	2326	325	382	58849	94217249
	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	58849	
	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249	94217249		94217249

The blocks of order 7 are **equal sums pandiagonal** magic squares with sum $M_{7\times 7} := 8407$. Moreover it is bimagic squares with bimagic sum $Sb_{49\times 49} := 94220679$.

Remark 1. *The **excel file** attached with this work contains only **pandiagonal** magic squares with **equal sums** of order 7 up to order 133, i.e., these are of orders 21, 35, 49, 63, 77, 91, 105, 109, and 133. It is left for the readers to check the other order multiples of 7. Whole the work in Excel file is up to order 140.*

4 Author's Contribution to Recreation of Numbers and Magic Squares

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