# 100-Magic Squares of Order 42 With Numbers 00-99 

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#### Abstract

During past years author worked with block-wise, block-bordered and block-wise bordered magic squares. In this work, we shall 100-write magic squares of order 42 with numbers from 00 to 99 . These numbers are equal sums with bordered magic squares of order 6 .


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## 1 Introduction

During past years author [5, 6, 7, 8, 9, 10, 11] worked with block-wise magic squares from orders 12 to 47. Author [12, 13, 14, 15, 16, 17, 18] also worked with bordered magic squares. The study on bordered magic squares is extended to block-bordered magic squares [19, 20, 21]. This is specially done for the magic squares of orders $p$ and $p$, where $p$ is a prime number. This study is still extended to block-wise bordered magic squares [22, 23, 24, 25]. The block-wise bordered magic squares as multiples of magic squares of orders $4,6,8,10,12,14 \ldots$ can be seen in [26, 27, 28, 29, 30, 31]. Some connections with Pythagorean triples and area-representations are also made [32, 33, 34, 35, 36]. 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 many cases, we have to use fractional numbers entries, specially to reach minimum perfect square sum of entries. For more study on bordered magic squares refer H. White's [1] and H. Danielsson's [2] web-sites.

The aim of this work is to combine the study of block-wise and bordered magic squares. In this case we considers blocks of magic squares such as magic squares of order 6, and then put them in such a way that every time removing external borders, still we are left with magic squares. Based on this idea, we wrote with block-wise bordered magic squares of orders 108 and 102. Every time when we remove the external border, we are left with block-wise bordered magic squares with minus order 12. For example, in case of order 108, removing external orders we are left with orders $96,84,72$, etc. and in case of orders 102, removing external orders, we are left with orders $90,78,66$, etc. Thus alternatively we complete all order magic squares multiples of 6 . The first two orders 6 and 12 are not block-wise bordered magic squares. From order 12 onwards, we always get block-wise bordered magic squares multiples of 6 , i.e., of orders $12,18,24$, etc. The magic squares of order 6 are considered in two ways. One as normal magic square and another as bordered magic square of order 6 with inner magic square as pandiagonal magic square of order 4. Based on the idea of block-wise bordered magic squares of order 6 , we have written in this work 100 magic squares of order 42 with the numbers 00 to 99

## 2 Magic Squares of Order 42

Below are two magic square of order 42 written in such a ways that one of them is equals sums blocks of order 6 . The second one is with equal sums bordered magic squares of order 6 . Below are both the magic squares:


The above magic square of 42 with equal sums magic squares order 6 are with magic sums: $S_{42 \times 42}:=37065$ and $S_{6 \times 6}:=5295$

```
1760 1758 3 1764 4 6 6 174 174 1740 21 1746 22 24 17424 1722 39 1728 40 42 42 1706 1704 57 1710
2
8
10
1756}1774
1759
1346 1344 417 1350 418 420 
416
```



```
424 1340 427 1334 429 1341 44, 1322 445 1316 447 1323 460 1304 463 1298 465 1305
```



```
1345 421 1348 415 1347 419 1327 439 1330 433 1329 437 1309 457 1312 451 1311 455
```



```
398
404}408135
406 13584091352 411 1359 712 1052 715 1046 717 1053 730 1034 733 1028 735 1035
```



```
1363 403 1366 397 1365 401 1057 709 1060 703 1059 707 1039
```



```
380
386 390 1373 396 1371 1379 692 696 1067 702 1065 1073 854 858 905 864 903 911 872 87% 887 882 885
338
1378}1369\mp@code{394 1375 392 387 1072 1063 700 1069 698 693 910 901 862 907 860 855 892 883 880 889 878 873 982 
```





```
368 372 1391 378 1389 1397 674 678 1085 684 1083 1091 836 840 923 846 921 929 818 822 941 828 939 947 800 804 959 810 957 965 566 
370}1139
1396 1387 376 1393 374 369 1090 1081 682 1087 680
```



```
|1418 1416 345 1422 346 348 1112 1110 651 1116 652 654 1130
```



```
350}35
```






```
326}
```



```
334
```



```
1435 331 1438}32
```

The above magic square of 42 with equal sums bordered magic squares order 6 are with magic sums: $S_{42 \times 42}:=37065$, $S_{6 \times 6}:=5295$ and $S_{4 \times 4}:=3530$. The magic squareS of order 4 considered in bordered magic squares order 6 are pandiagonal.

## 3 Magic Squares of Order 42 With Numbers 00 to 99

There are total 100 magic squares of order 42 having numbers from 00 to 99 . Since it is little difficult to put all the 100 magic square here in this work. We have put only few. The other can be seen in excel file attached with the work. These can also be seen at author's sites: https://inderjtaneja.com/ [3] and https://numbers-magic.com/ [4].

### 3.1 Magic Squares of Order 42 With Number 00



### 3.2 Magic Squares of Order 42 With Number 05



### 3.3 Magic Squares of Order 42 With Number 10

### 3.4 Magic Squares of Order 42 With Number 15

### 3.5 Magic Squares of Order 42 With Number 20



### 3.6 Magic Squares of Order 42 With Number 25



### 3.7 Magic Squares of Order 42 With Number 30



### 3.8 Magic Squares of Order 42 With Number 35



### 3.9 Magic Squares of Order 42 With Number 40



### 3.10 Magic Squares of Order 42 With Number 45



### 3.11 Magic Squares of Order 42 With Number 50



### 3.12 Magic Squares of Order 42 With Number 55



### 3.13 Magic Squares of Order 42 With Number 60



### 3.14 Magic Squares of Order 42 With Number 65



### 3.15 Magic Squares of Order 42 With Number 70



### 3.16 Magic Squares of Order 42 With Number 75



### 3.17 Magic Squares of Order 42 With Number 80



### 3.18 Magic Squares of Order 42 With Number 85



### 3.19 Magic Squares of Order 42 With Number 90



### 3.20 Magic Squares of Order 42 With Number 95



### 3.21 Magic Squares of Order 42 With Number 99



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

For author's contribution to magic squares and recreation numbers please see the links below:

- Inder J. Taneja, Magic Squares, https://inderjtaneja.com/2019/06/27/publications-magic-squares/
- Inder J. Taneja, Recreation of Numbers, https://inderjtaneja.com/2019/06/27/publications-recreation-of-numbers/


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```
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[3] Inder J. Taneja, Magic Squares - https://inderjtaneja.com/category/magic-squares/
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```


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