Magic Constant Squares

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16

This is one of those puzzles where you ask a friend to choose some numbers 'at random', and then you announce that you already know the total of the numbers they chose. That's Magic!

Puzzle 1

Instructions **Choose any of the 16 numbers in the 4x4 square** (6), circle it, then cross out all other numbers in the row and column of the circled number (Fig.1)
Choose any of the numbers not crossed out (16) and circle it, then cross out all other numbers in the row and column of the circled number (Fig.2)
Choose any of the numbers not crossed out (3) and circle it, then cross out all other numbers in the row and column of the circled number.
Choose the last remaining number not crossed out (9) and circle it, then cross out all other numbers in the row and column of the circled number (Fig.3)
Add together all circled numbers to get a total of 34

Fig.1

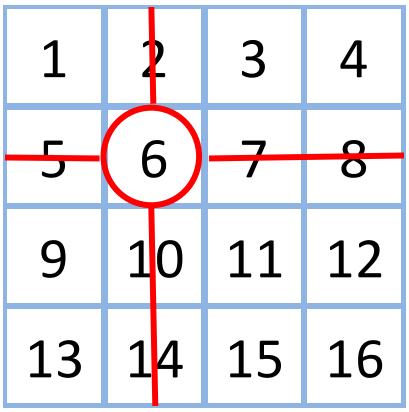


Fig.2

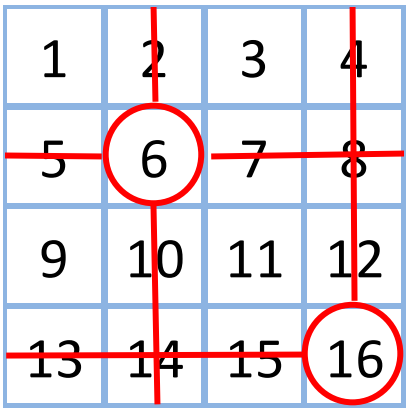
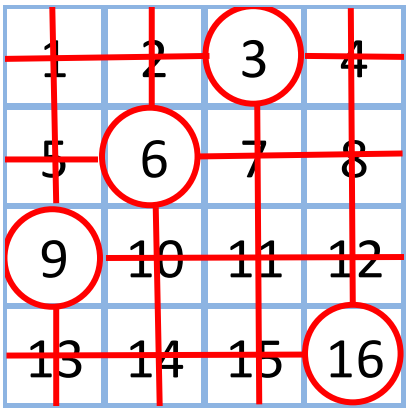


Fig.3



Puzzle 2

Start again, this time choosing a different set of 4 numbers to circle.
The total of your circled numbers is the same as before, 34

Puzzle 3

Repeat several times more, and in every case, **the total is 34.**

Puzzle 4

Now repeat the same procedure several times with this new square (Fig.4)

In every case the totals of your circled numbers should be the same, but different from the totals in Fig.1

Fig.4

5	10	15	20
25	30	35	40
45	50	55	60
65	70	75	80

Fig.5

16	14	15	20
11	9	10	15
8	6	7	12
24	22	23	28

Puzzle 5 Repeat the same procedure several times with this new square (Fig.5)

In every case the totals of your circled numbers should be the same, but different from the totals in Fig.1 and Fig.4

Puzzle 6

Now create puzzles of your own, and in doing so, discover the secret of the magic totals. Imagine that your square has row headings and column headings which are normally hidden from view (Fig.6). Put any numbers you like in these row and column headings, and then fill in the square with the **totals** of each row and column heading(Fig.7). Finally, **hide the row and column headings (Fig.8)**. **Choose and circle your numbers and find their total.**

Fig.6

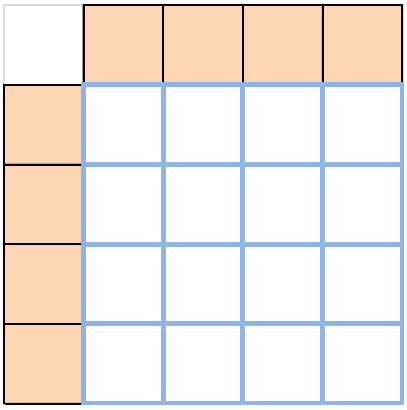


Fig.7

	7	24	3	10
5	12	29	8	15
2	9	26	5	12
18	25	42	21	28
6	13	30	9	16

Fig.8

12	29	8	15
9	26	5	12
25	42	21	28
13	30	9	16

Puzzles 7 and 8 Choose and circle numbers in Fig.9 and Fig.10, and then find their totals.

Fig.9

-13	-10	-1	2	6
-7	-4	5	8	12
-5	-2	7	10	14
8	11	20	23	27
13	16	25	28	32

Fig.10

7	-1	2	12	1	18
1	-7	-4	6	-5	12
10	2	5	15	4	21
3	-5	-2	8	-3	14
-12	-20	-17	-7	-18	-1
-6	-14	-11	-1	-12	5

Answers