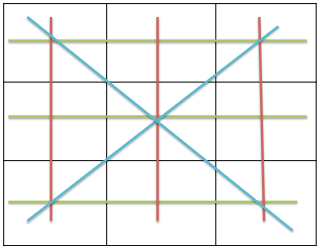


Magic Squares
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Magic Squares



4	9	2
3	5	7
8	1	6

$n+3d$	$n+8d$	$n+d$
$n+2d$	$n+4d$	$n+6d$
$n+7d$	n	$n+5d$

$n + (n+1d) + (n+2d) + (n+3d) + (n+4d) + (n+5d) + (n+6d) + (n+7d) + (n+8d)$
 $= 9n + 36d$
 $9n+36d/3 = 3n+12d$

Or we can let the middle term be m then the boxes above would be

$m-1$	$m+4$	$m-3$
$m-2$	m	$m+2$
$m+3$	$m-4$	$m+1$

$(m-3) + (m-2) + (m-1) + m + (m+1) + (m+2) + (m+3) = 9m$
 $9m/3 = 3m$
Therefore for any arithmetic sequence the sum of the rows will be three times the median of the numbers or the middle number.

Using 9, 15, 21, 27, 33,
 39, 45, 51, 57
 Make a magic square.

27	57	15
21	33	45
51	9	39

PERSONAL 4 x 4 MAGIC SQUARE

Top row put in your birthday
month, day, first 2 year, last 2 year.
My magic number is 92

9	14	19	50

Second row third box put in month
minus a number, say 2

9	14	19	50
		7	

The top right 4 boxes will make a magic square, add the three
boxes numbers and subtract from your magic number

9	14	19	50
		7	

9	14	19	50
		7	16

Top middle 4 boxes is also a magic square. Find the empty box number.

9	14	19	50
		7	16

9	14	19	50
	52	7	16

The second row is missing one number, find that number.

9	14	19	50
	52	7	16

9	14	19	50
17	52	7	16

The lower left box will be the day or the second number in the first row.

9	14	19	50
17	52	7	16
14			

First column is missing one number so find that number.

9	14	19	50
17	52	7	16
14			

9	14	19	50
17	52	7	16
52			
14			

The diagonal from lower right to upper left is missing a number.

9	14	19	50
17	52	7	16
52			
14			

9	14	19	50
17	52	7	16
52	21		
14			

Finish the second column.

9	14	19	50
17	52	7	16
52	21		
14			

9	14	19	50
17	52	7	16
52	21		
14	5		

The lower right box is the first two digits of your birth year.

9	14	19	50
17	52	7	16
52	21		
14	5		

9	14	19	50
17	52	7	16
52	21		
14	5		19

You can finish off the last column

9	14	19	50
17	52	7	16
52	21		
14	5		19

9	14	19	50
17	52	7	16
52	21		7
14	5		19

Now finish the third row

9	14	19	50
17	52	7	16
52	21		7
14	5		19

9	14	19	50
17	52	7	16
52	21	12	7
14	5		19

You should be able to finish the last row.

9	14	19	50
17	52	7	16
52	21	12	7
14	5		19

9	14	19	50
17	52	7	16
52	21	12	7
14	5	54	19

PERSONAL 4 x 4 MAGIC SQUARE

Day	Month	1st yr	2nd yr
		Day +/- n	Month -/+ n
			1 st yr

PERSONAL 4 x 4 MAGIC SQUARE

A	B	C	D
C-	D+	A-	B+
D+	C+	B-	A-
B	A--	D++	C

The Joy of Mathematics Course Guide Book
by Dr. Arthur Benjamin; The Teaching
Company 2007; Published by The Great
Courses, Chantelly, Virginia
