

Problem solving challenge #7

## Magic Squares

This problem gives you the chance to:

- work with magic squares, calculating cell values
  - understand simple algebraic notation
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6	1	8
7	5	3
2	9	4

In this square, adding the numbers in each row, each column and each diagonal gives the same result.

For such a square to be a “magic square” all nine numbers must be different.

1. Find the sum of each row, each column and each diagonal for this magic square. \_\_\_\_\_

$x + z$	$x - y - z$	$x + y$
$x + y - z$	$x$	$x - y + z$
$x - y$	$x + y + z$	$x - z$

This is the general form of a magic square, in which  $x$ ,  $y$  and  $z$  represent numbers.

2. Find the sum of each row, each column and each diagonal for this square.

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Here is a partially completed magic square.

3. Use algebra to complete this magic square.

12		14
4		6

4. Find the sum of each row, each column and each diagonal for the completed square. \_\_\_\_\_