

ACSL

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American Computer Science League

All-Star #6

Agrippa Magic Squares

PROBLEM: Heinrich Cornelius Agrippa von Nettesheim (1486-1535) developed a procedure for finding odd order magic squares. An odd order magic square is a square of side N where N is an odd number.

	1	

		2
3		
	1	

4		2
3		
	1	

4	9	2
3	5	7
8	1	6

The rules for completing the magic square are:

1. Place the number 1 in the box just below the center box.
2. Place succeeding numbers in the box that is one down and one to the right. Follow this rule until you are out of the square.
3. If after completing the one down-one to the right rule and you go out of the square at the bottom of a column, go to the top of that column.
4. If after completing the one down-one to the right rule and you go out of the square at the end of a row, go to the other side of that row.
5. When the rules would cause the next number to be placed in a box that already has a number, put the next number two spaces below the last number. Note the placement of the 4 in the above example.
6. When the box in the lower right hand corner is filled, put the next number in the box at the end of row 2. Note the placement of the 7 in the example above.

INPUT: There will be 10 lines of input. Each line will contain 3 integers. The first integer will represent the size of the square. The next 2 integers will represent the location of a box in the square. In the above example the 4 is at location 1,1 and the 9 is at location 1,2.

OUTPUT: For each input line, print the number stored in that box of the Agrippa magic square.

SAMPLE INPUT

1. 3, 3, 2
2. 3, 2, 1
3. 5, 1, 1
4. 7, 7, 5
5. 9, 2, 9

SAMPLE OUTPUT

1. 1
2. 3
3. 11
4. 34
5. 46