

Name: _____ Student No. _____ - _____ - _____

Programming the KenKen puzzle on yourself and on another human being.

In an [Inky](#) puzzle, similar to [KenKen](#), each digit appears once in a column and row within a grid of n cells. (This is similar to Sudoku puzzles.) e.g. the digits 1, 2, and 3 appear uniquely in each row and each column.

1	3	2
2	1	3
3	2	1

A heavy outline divides the grid into “cages” where cells are combined—in any order—to produce the result using the math operator. For example, $6\times$ means all cell values multiplied together equal 6 such as 2×3 or 3×2 or $1 \times 2 \times 3$. Numbers in cages may repeat, as long as they are not in the same row or column. Here is a sample:

2÷	5+	
	2-	
6×		1


1×1 cages simply have a digit. If the operation is + (or \times), then the sum (or product) of all the digits in that cage results in the indicated number. If the operation is – (or \div) then the two cells result in the difference (or quotient) of the indicated number.

The solution to the puzzle at left is in the above right.

At <http://www.kenkenpuzzle.com>, Select Puzzle Type And Difficulty: 3x3, Addition only, Easiest. If you are not at a networked computer, similar sample puzzles are below.

Yes, it is the easiest puzzle to solve. The challenge here is not in solving the puzzle. It is describing *how* to solve the puzzle, firstly to yourself, secondly to the person beside you.

Guiding principle: what set(s) of digits, unique within a column/row, can give a cage’s result? At first, that may not indicate the sequence of digits within a cell but it does indicate which digit(s) belong in cell(s) both inside and outside the cage.

Start Notepad (Windows key  + R, notepad) or write on the back of the lab sheets. Document your steps to solve any KenKen 3x3, Addition only, Easiest puzzle. Solve a puzzle, write down the logical steps you used to solve it. (Save your Notepad file on the desktop.) Try another puzzle and see if the steps you wrote down are successful. Your steps are likely good enough when you can solve the next puzzle without modifying your steps.

When you are confident that your steps are complete, switch with the person beside you and try their steps *exactly*. Did their steps work for you? Did your steps work for them? Switch back to your original computer and refine your steps so that anyone could complete a simple KenKen puzzle using your logic.

Business analysts call those steps a procedure. You've just written a program that runs on a human.

1. Develop your rules for this puzzle.

5 +	4 +	1
		7 +
1		

2. Test here. If needed, refine your rules and write the revised version on the back of this page.

3+	5+	
	4+	
4+		2

3. Have another person verify your rules using these puzzles.**The other person can add their own refinement notes to discuss with you.**

7+		5+
2	4+	

To the other person:
Please initial here and note how
successful the rules were.

5+		3+
4+	3+	
		3

To the other person:
Please initial here and note how
successful the rules were.
