THE RULES

In the standard $n \times n$ KenKen puzzle, the numbers in each heavily outlined set of squares, called cages, must combine (in any order) to produce the target number in the top corner of the cage using the mathematical operation indicated. Each of the numbers 1 to n must appear in each (horizontal) row and each (vertical) column. A number can be repeated within a cage as long as it is not in the same row or column.

LEARN MORE

We will mostly be using ideas and puzzles from Dr. Harold Reiter's seminars. Notes can be found at http://math2.uncc.edu/∼hbreiter/DavidsonInstitute/KenKen.htm if you would like to learn even more techniques than we will have time to discuss. He also has many tough variations on standard KenKen puzzles.

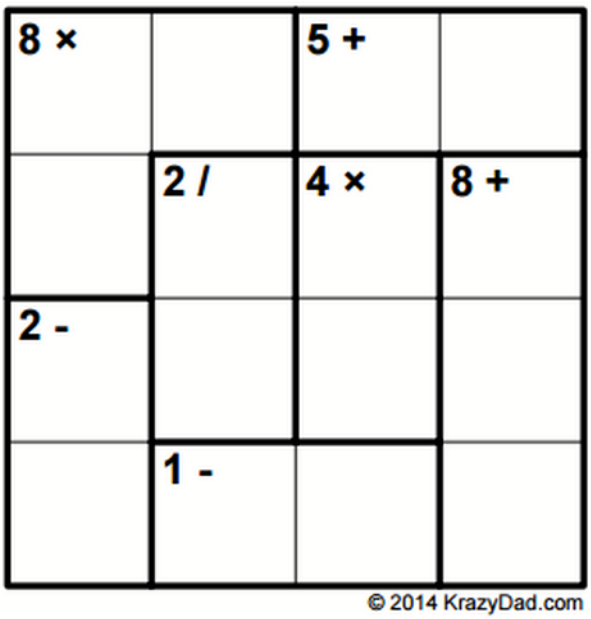
GET MORE PUZZLES

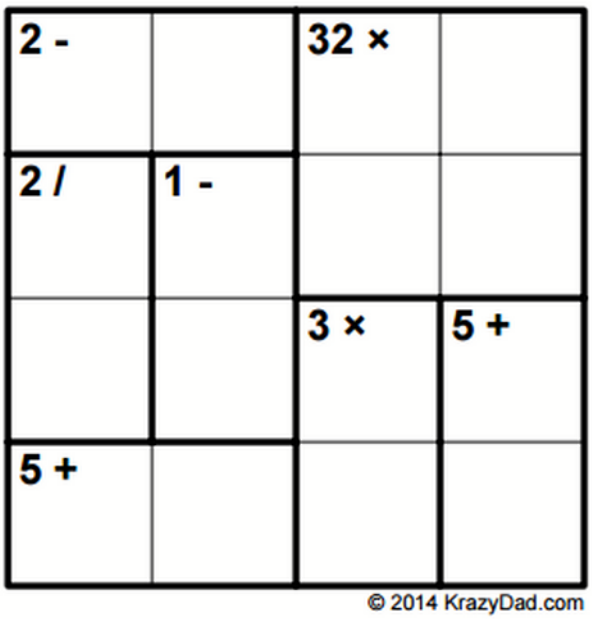
You can find many more puzzles of various difficulty levels at:
http://www.nytimes.com/ref/crosswords/kenken.html
http://krazydad.com/inkies/ (called Inkies here)

SOME MORE MATH KEYWORDS

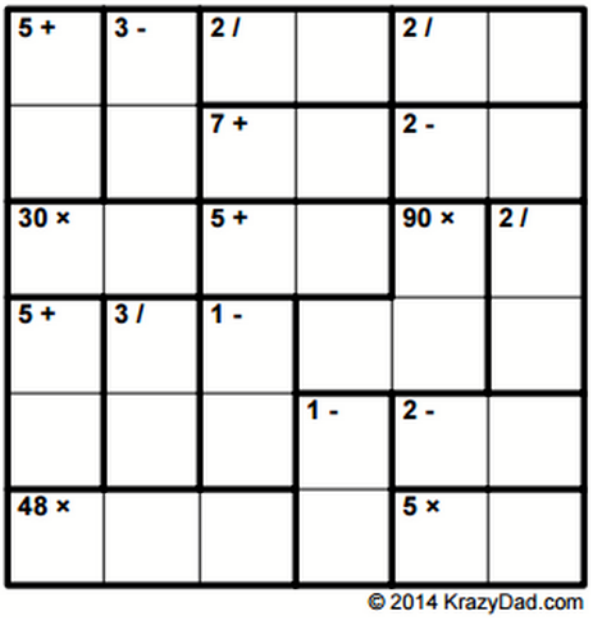
While most of KenKen is typical arithmetic, basic logic, and process of elimination, we will also see some more advanced math, including ideas related to many of these math topics: triangular numbers, Latin Squares, factoring, partitions of integers, parity, modular arithmetic, complex numbers, Gaussian integers.

WARMUP

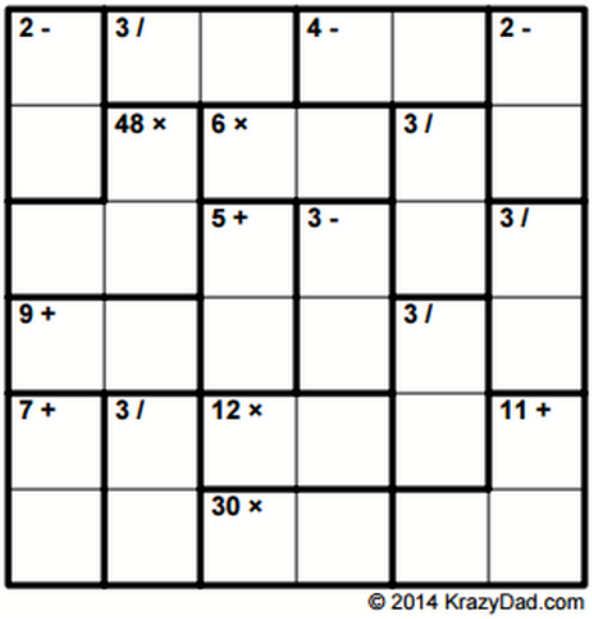


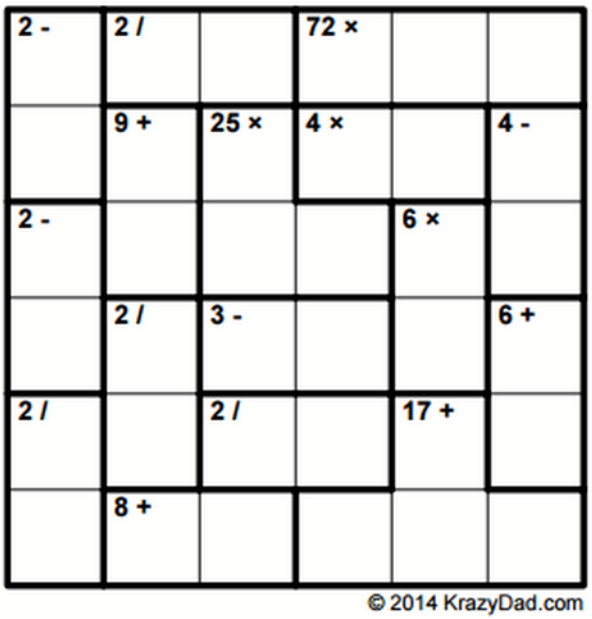


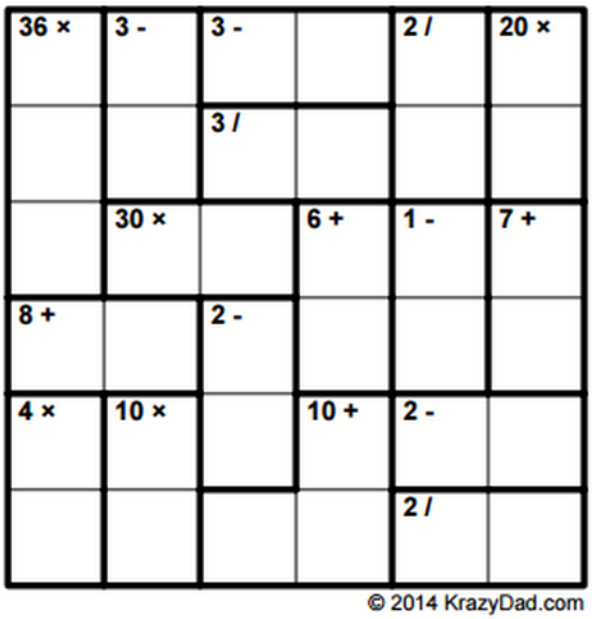
More standard practice.



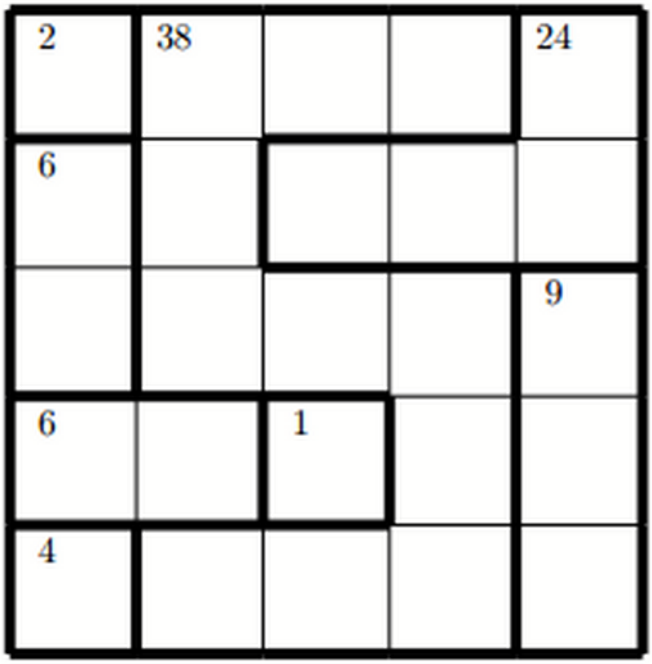
Easy 6x6 Inkies by Krazydad, Volume 1, Book 1



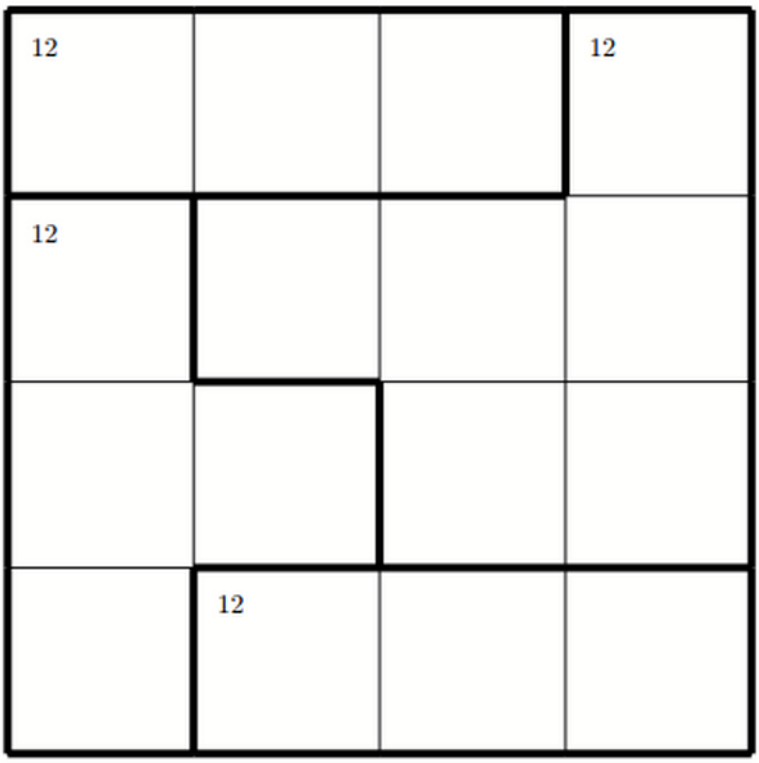




Here are some 5×5 puzzles with curious cage shapes. Here you will often need to do a fair bit of thinking before you can fill in your first few entries. Some of these don't specify which operations to use, but fear not – there is enough info for you to figure it out. At least for now, we will only use subtraction and division on cages with exactly 2 boxes. (This is so that there is no strangeness with the associative property.)



2. This lovely problem is due to Palmer Mebane at Art of Problem Solving.

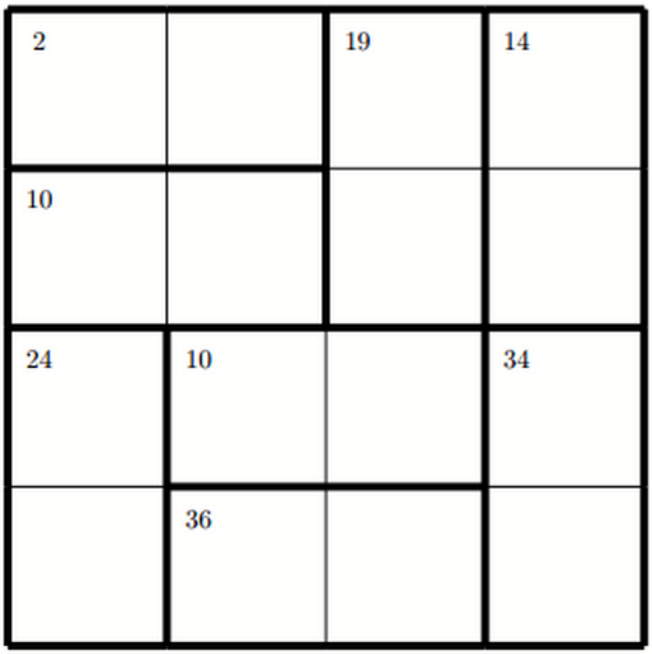


600×	2−		2−	
	30×		5	5+
		2−		
		8+		1−

32+			3+	
			1−	3−
	4×	2	2−	
			10×	

Wilder variants. Check the directions! These are nonstandard.

3. In the regular puzzle KenKen, the numbers in each heavily outlined set of squares, called *cages*, must combine (in any order) to produce the *target number* in the top corner of the cage using the mathematical operation indicated. A number can be repeated within a cage as long as it is not in the same row or column. In this 4×4 puzzle, the **four numbers** are known only to be prime numbers. In contrast to most KenKen puzzles, here you must figure out which operations produce the target numbers. Of course any cage with more than two cells must be multiplication or addition.



2. On long trips, Panther linebackers like to amuse themselves doing mathematical puzzles, one of which is known as KenKen. In the 7×7 below, it is possible to distribute the digits 1 through 7, one to each row and one to each column in such a way that all the mathematical clues are satisfied. When this is done, the value of x is determined. The number K is 604800. What is x? Some points awarded for progress on the problem. The rows and columns are labeled so that you can write statements about partial solutions. You need not find the complete 7×7 Latin square to get full credit. Just find x with justification.