Number Cross

by Hollis A. Palmer

This is a crossword puzzle without words -- numbers are the answers instead (a single digit for each square in the grid). Unlike a crossword puzzle, deductive logic based on a knowledge of math is needed to work out the answers from information provided in the clues. A little trial and error solving may also be necessary. (Bold black lines in the puzzle grid separate entries in the same way as black squares.) Additional clue: there are no zeros in the completed grid.

1	2	3	4	■
5			6	7
8				
	■	9	10	
11		12		

CLUES

ACROSS
1 The first two digits are a prime number; the second two are the next lower prime number

5 A perfect cube

6 A multiple of the cube root of 4 DOWN; sum of digits is 6

8 The sum of the first two digits equals the sum of the last two digits equals the middle digit

9 A perfect cube

11 The square of the cube root of 4 DOWN

12 The product of 10 DOWN times 6 ACROSS

DOWN
1 A number in which each digit is one lower than the preceding digit

2 The sum of the digits is two-thirds the product of the digits

3 The product of three primes; the first 10 larger than the second;
the second 10 larger than the third

4 A perfect cube

7 All even digits; each different

9 A perfect cube

10 A prime number