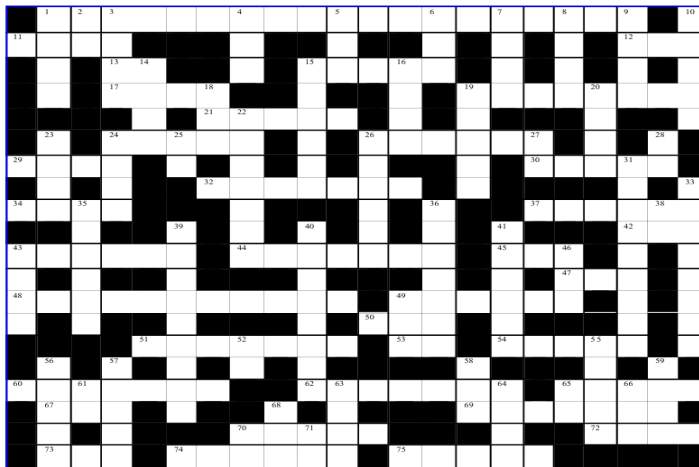


Number Theory Crossword Puzzle

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- 32 An example of a pair of Ruth-Aaron numbers are $(714, 700 + n)$, where $n = \underline{\hspace{1cm}}$
- 34 He proved $M_{67} = 2^{67} - 1$ was composite at the 1903 meeting of the AMS
- 37 Divisor
- 42 Period of time
- 43 How to see your homework if the electricity goes out
- 44 The E in John E. Littlewood, who was famous for his association with Hardy
- 45 If n has a representation as a sum of two squares, then no $(4k + 3)$ -prime can appear to $a(n)$ $\underline{\hspace{1cm}}$ power in the canonical representation of n
- 47 Organization founded in 1888 to "further mathematical research and scholarship" (abbrev.)

ACROSS

- 1 Number theory conjecture that is one of the seven Clay Mathematics Institute prize problems
- 11 Eat this black and white cookie while you do homework
- 12 Use this to listen to number theory lectures
- 13 Euclid $\underline{\hspace{1cm}}$ Alexandria
- 15 The continued fraction $[1; 1, 1, 1, \dots]$ is not the Silver Sum or the Copper Product, but rather the Golden $\underline{\hspace{1cm}}$
- 17 A number with as many digits as its name
- 19 This symbol is a number theoretic function which is defined to equal either $+1$ or -1
- 21 What one hopes to do with a conjecture
- 24 A Sophie Germain prime is, by definition, a prime p such that $2p + 1$ is $\underline{\hspace{1cm}}$
- 26 His last theorem was scribbled in the margin of his copy of Diophantus's *Arithmetica*
- 29 Riemann $\underline{\hspace{1cm}}$ function
- 30 He originated the symbols $f(x)$, e , i , p , and Σ
- 48 He was the first to give the general solution to linear Diophantine equations
- 49 Archimedes' cattle once grazed on the fields of this Mediterranean isle
- 50 An elementary check of multiplication which makes use of the congruence $10^n \equiv 1 \pmod{9}$, "casting $\underline{\hspace{1cm}}$ nines"
- 51 He founded, in 1996, the Great Internet Mersenne Prime Search
- 53 First and last letters in abbreviation for one million cycles per second
- 54 In 1971 Brillhart and Morrison were able to factor the Fermat number F_n , where n is equal to $\underline{\hspace{1cm}}$
- 60 All even perfect numbers beyond 6 have a $\underline{\hspace{1cm}}$ root of one
- 62 Both he and his father were mathematical lecturers at Oxford, but he became famous for his interactions with the daughter of the Dean at Christ Church, Oxford
- 65 Author of the Tower of Hanoi puzzle
- 67 2 is not a $\underline{\hspace{1cm}}$ for a Pythagorean triangle