## Math 201  - Elementary Theory of Numbers

## (*aka* Discrete Mathematics)

## Fall Semester 2015

Section 002:  TTh 2:30 – 3:45 pm  (406 Mundelein Center)



[*the prime spiral (aka the Ulam spiral)*](https://en.wikipedia.org/wiki/Ulam_spiral)

 Notice that the blue numbers (all primes but for 1) tend to line up along [diagonal](https://en.wikipedia.org/wiki/Diagonal) lines.

In a passage from his 1956 novel [*The City and the Stars*](https://en.wikipedia.org/wiki/The_City_and_the_Stars), author [Arthur C. Clarke](https://en.wikipedia.org/wiki/Arthur_C._Clarke) describes the prime spiral seven years before it was discovered by Ulam.

Clarke did not notice the pattern revealed by the prime spiral because he never actually performed the experiment.

* [Ground Rules](http://www.math.luc.edu/~ajs/courses/201fall2015/groundrules.pdf)
* [Piazza](file:///C%3A%5CUsers%5Casalesk%5CApplication%20Data%5CSSH%5Ctemp%5Cpiazza.com%5Cluc%5Cfall2015%5Cmath201%5Chome)
* [Homework & Reading Assignments](http://www.math.luc.edu/~ajs/courses/201fall2015/homework.pdf)
* Homework Solutions ([#1](http://www.math.luc.edu/~ajs/courses/201fall2015/hwSolutions/hwSoln1.pdf), [#2](http://www.math.luc.edu/~ajs/courses/201fall2015/hwSolutions/hwSoln2.pdf), [#3](http://www.math.luc.edu/~ajs/courses/201fall2015/hwSolutions/hwSoln3.pdf), [#4](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps4.pdf), #5, #6)
* Groupwork ([ps1](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps1.pdf), [ps2](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps2.pdf), [ps3](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps3.pdf), [ps4](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps4.pdf), [ps5](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps5.pdf), [ps6](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps6.pdf), [ps 7](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps7.pdf), ps 8, ps 9, [ps 9.5](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps9.5.pdf), ps 10, ps 11, ps 12, ps 13, ps 14, ps 15, [ps16](http://www.math.luc.edu/~ajs/courses/201fall2015/probSets/ps16.pdf))
* Quiz Solutions (Qz1)
* [Final Exam topics](http://www.math.luc.edu/~ajs/courses/201fall2015/201FinalPrep.pdf)
* Test Solutions ([T1-A](http://www.math.luc.edu/~ajs/courses/201fall2015/testSolutions/test1InClass.pdf), [T2-A](http://www.math.luc.edu/~ajs/courses/201fall2015/testSolutions/test2InClass.pdf), [T3-A](http://www.math.luc.edu/~ajs/courses/201fall2015/testSolutions/test3InClass.pdf))
* [Useful References](http://www.math.luc.edu/~ajs/courses/201fall2015/references.pdf) (Discrete Mathematics & Number Theory websites; Supplementary texts)
* [History of Number Theory](http://www-gap.dcs.st-and.ac.uk/~history/Indexes/Number_Theory.html)

On the other hand, it is impossible for a cube to be written as a

sum of two cubes or a fourth power to be written as a sum of two

fourth powers or, in general for any number which is a power

greater than the second to be written as a sum of two like powers.

For this I have discovered a truly wonderful proof, but the margin

is too small to contain it.

– P. Fermat

[Department Home Page](http://www.math.luc.edu/) [Loyola Home Page](http://www.luc.edu/)