Math 201 - Discrete Mathematics and the Theory of Numbers

Spring Semester 2019

Section 001: MWF 2:45 – 3:35 pm (233 Dumbach Hall)

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### The Prime Spiral (aka the Ulam Spiral)

Notice that the blue numbers (all primes but for 1) tend to line up along diagonal lines. In a passage from his 1956 novel *The City and the Stars*, author Arthur C. Clarke describes the prime spiral seven years before Ulam discovered it. Clarke did not notice the pattern revealed by the prime spiral because he never actually experimented.

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- **Ground Rules**
- **Piazza**
- **Homework & Reading Assignments**
- **Questions for Class Discussion**
- **Useful References**
- **History of Number Theory**
- **Quiz Solutions** (Q1, Q2, Q3, Q4, Q5, Q6)
- **Practice Tests** (T1, T2, T3)
- **Test Solutions** (T1, T2, T3)
- **Essay Topics** (extra credit)
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