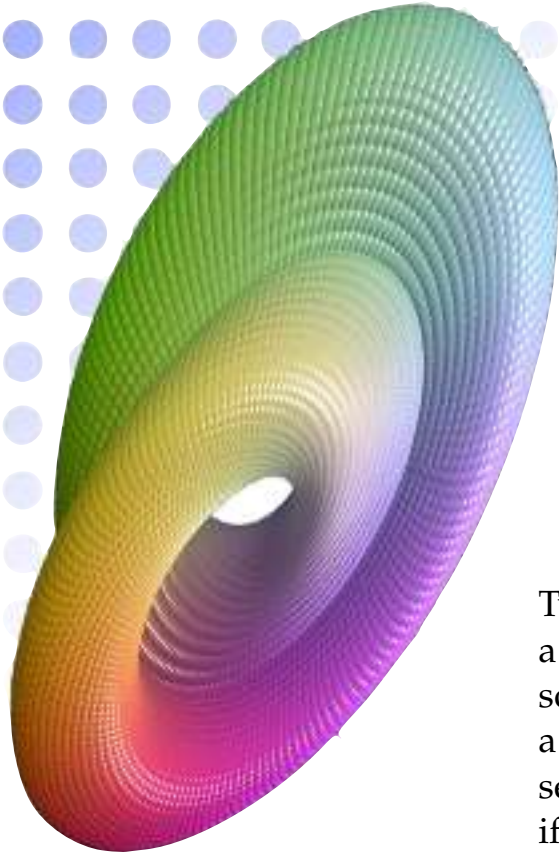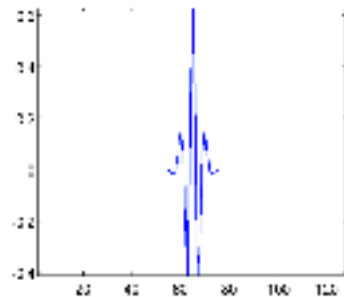# Michigan Math Club

Thursday at 4pm in the Nesbitt Room
Free Pizza and Pop

Polynomial Interpolation Tricks

Martin J. Strauss   •   17 January 2019

Two points determine a line and three points determine a quadratic. Starting from that observation, we derive some applications, including, as time allows, how to store a file in the cloud in seven sites so that no two sites can see your secret files but any three can recover them, even if some of the other four sites fail or are compromised;

how to multiply long numbers quickly and how to multiply polynomials like $(ax + b)(cx + d)$ in three multiplications of coefficients instead of the four that arise from FOIL; and how to derive the Uncertainty Principle that a short musical note does not have a well-defined frequency.

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        5219
      × 4837
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       36533
       15657
       41752
       20876
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     25244303
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