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Zoom for Thought

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Theorems Featuring Facts of FFT Tables of Full Frequency

Abstract:

The FFT problem, which was inspired by work of Guldemond, can be stated as follows: how can you fill a 3x3 grid with F's and T's such that it contains as many copies of the word "FFT" as possible? For example, the following two grids each contain 5 copies of the word FFT (we allow the word to be written forwards or backwards, and to appear in rows, columns, or diagonals):

<i>FFT</i>	<i>FTF</i>
<i>FFT</i>	<i>TFF</i>
<i>FFT</i>	<i>FFT</i>

Grubb claimed that there exists a grid containing 6 copies of FFT. Eight minutes later he claimed that actually, the best you could do is 5. He offered no proof of either claim. In this talk we consider a generalization of the FFT problem. Namely, given a word w of length n and a grid G of letters, let $f(w, G)$ be the number of times w appears in G , and let $f(w) = \max_G f(w, G)$. We determine $f(w)$ for a number of words, and in particular we determine $f(FFT)$, solving the FFT problem. I, Sam Spiro, will be the only person talking for the entire hour that the talk is given. Absolutely nothing out of the ordinary will happen during the talk.

Friday, March 5, 2021

4:00 PM

Please see email with subject "Zoom for Thought Information."
