Lethbridge Number Theory and Combinatorics Seminar

Monday — November 30, 2015
Room: **C630**
Time: **12:00 to 12:50 p.m.**

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Explicit bounds for $\psi(x; q, a)$

Abstract: The prime number theorem in arithmetic progressions establishes that, for a and q fixed coprime integers, then $\psi(x; q, a)$ is asymptotic to $\frac{x}{\phi(q)}$ when x is large. We discuss new explicit bounds for the error term $\left|\frac{\psi(x; q, a) - \frac{x}{\phi(q)}}{\frac{x}{\phi(q)}}\right|$, which provide an extension and improvement over the previous work of Ramaré and Rumely. Such results depend on the zeros of the Dirichlet L-functions: a numerical verification of the Generalized Riemann Hypothesis up to a given height and explicit zero-free regions. We use the latest results of respectively Platt and Kadiri. In addition our method makes use of smooth weights. This is joint work with Allysa Lumley.

EVERYONE IS WELCOME!

Visit the seminar web page at http://www.cs.uleth.ca/∼nathanng/ntcoseminar/

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