

NUMBER THEORY SEMINAR

Quarter Gauss Factorials assuming simplest value

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WHERE: Chase 319

ABSTRACT:

Karl Dilcher and I study Gauss factorials (they are beautiful). We are completing our work on the special case of quarter Gauss factorials, and of particular interest are the integers for which such factorials assume their simplest value: 1. These integers divide into two classes: the standard and non-standard. The *least* non-standard is 205479813, and there are *exactly* five other small ones (the largest of which is $n_1 = 133303423608267$). We have proved a complete characterisation of such integers, as a result of which we can construct others, the least *known* of which (N_1) has 155 decimal digits, and we can construct others, the largest *known* of which has 14306 decimal digits.

There could be others between n_1 and N_1 ; but we do not know. How can we have a 'complete characterisation' and *not* know this? All will be made clear. No previous knowledge of number theory will be needed to follow this talk.

Any questions, please e-mail: rnoble@mathstat.dal.ca.