The Fullerton College Mathematics Colloquium
presents

Valerie Guerra
Fullerton College

"Can a 6th Power of a Positive Integer be the Sum of Five 6th Powers of Positive Integers?"

ABSTRACT:

For a natural number n, one can ask whether or not there are natural numbers $x_1, x_2, \ldots x_j$, and z such that
$$x_1^n + x_2^n + x_3^n + \ldots + x_j^n = z^n.$$
When $n = 2$, the answer is "yes" for Pythagorean triples. The answer is yes when $n = 5$ and $j = 4$ and also in the case when $n = 4$ and $j = 3$. This problem is open, in particular, in the case when $n = 6$ and $j = 5$, and a negative answer in the case that $j = 2$ and $n > 2$ (the famous so-called Fermát's Last Theorem) was not verified until 1997. Ms. Guerra, currently a second-semester calculus student who has previously spoken at the Math Colloquium and also at the Pacific Coast Undergraduate Math Conference, will discuss this problem for various j's and n's. If you know how to add and what an exponent is, then Ms. Guerra will make sure that you understand her talk completely. *Mentor: Dr. Dana Clahane*

Dr. Dana Clahane
Fullerton College

"What is the Largest Power of 2 that Divides the Number of Latin Squares of a Given Order n?"

ABSTRACT:

After defining what it means for a number to divide another number and what a Latin square of positive integer order n is, we will discuss the open question of determining the largest integer p_n such that $2^{p(n)}$ that divides L_n, where L_n is the number of Latin squares of order n.

Thursday, October 4, 2012
12:45-2:50pm
North Science Building, Room 623
Fullerton College
321 E. Chapman, Fullerton CA 92832-2095

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