PROBLEMS FOR MARCH'09

1. Last Two Digits

Problem provided by Mike Pinter, Belmont University

Determine the last two digits of

$$2^{20,000,009} + 6^{20,000,009} + 7^{20,000,009}.$$

2. Factors

Problem provided by Mike Pinter, Belmont University

(i) Which of the five numbers 2007, 2008,2009,2010,2011 has the largest number of factors, and which one has the fewest number of factors?

(ii) Determine the total number of factors for the number

$$2007.2008.2009.2010.2011.$$

(For example, 21 has 4 factors (1,3,7,21) and 20 has 6 factors (1,2,4,5,10,20).

Winner gets a recognition on the problem board and the mathclub website and a $5 gift card from the bookstore.

Copies available below! Feel free to take one and enjoy! Submit your solutions to one of the Math Professors at school by April 15. You can also find a copy at the Math Club website at

http://faculty.randolphcollege.edu/ykurt/mathclub/mathclub.htm.