## Reflections of a Senior

You may remember my articles last semester, *What to Do With Your Math Major*, with one of the articles focusing on being a cryptographer. For those who don't remember, a cryptographer is someone who is skilled at deciphering codes to intercept information and creating codes in order to protect private information.

I decided to write that article because I was taking Introduction to Cryptography (MTH 221) at the time. MTH 221 is an upper-level course offered every other fall, and it's taught by either Dr. Molina or Professor Sipka. Intro to Cryptography is a great upper-level course with some minor proofs to help ease you into proof writing before some of the 400-level classes. You'll also learn and do a lot of modular arithmetic, something you'll really need when you take Number Theory (MTH 351).

I believe that the most fun (yes, math classes can be fun) was learning how to encrypt and decrypt messages. One good memory I have, is deciphering Meg Jurek's and Alex Hegedus' complimentary message "Hey Jon, nice shorts." In 221, we all had a good time and enjoyed learning an application of our math knowledge. *Jon Young*

## Important Dates for Seniors

Attention all seniors! Please be aware of the following dates.

**March 8:** Your paper is due.

**March 12:** Presentations begin @ 4:00 and Senior dinner @ 5:30

## Math Help Center Open for Business

Where can I go when I'm struggling with a math problem? Try the **Math Help Center**. It's a walk-in clinic for anyone wrestling with math problems. Just show up at one of the following places, and a capable math tutor will assist you.



**For MTH 101:**
Tuesday and Thursday: 7-10 pm in SAC 214

**For MTH 116:**
Tuesday and Thursday: 8-10 pm in SAC 211

**For MTH 121 & 122:**
Monday through Thursday: 7-10 pm in SAC 216

## The Math Club

The Alma College Math Club meets **EVERY TUESDAY at 9 pm** in the Wright Hall lobby.

*Pi-Day* is just around the corner, and the Math Club has plans for the big day. Watch for info.

  Pres: **Emma Patmore**
    VP: **Phil Ryskamp**
 Treas: **LeeAnne Carr**
   Sec: **Katie Dwenger & Aaron Colamorino**

## Senior Dinner

Seniors: make plans to attend the senior dinner on **Tuesday, March 12th** at **5:30**. This is always a time of good food and good conversation.

## Michigan Undergrad Math Conference

The 15th Annual Michigan Undergraduate Mathematics Conference (MUMC) will be held on **Saturday, February 23rd**, at Siena Heights University. The meeting will give undergraduate students the opportunity to present results of their projects and research, and to listen to topics that are of interest to other undergraduate students in our region. *Any topic* in undergraduate mathematics that is likely to be of interest to other undergraduate mathematics students is appropriate, be it in history, education, applications, student projects/research, or REU's. We are scheduling the talks for 15 minutes each with five minutes between talks. Registration for the conference is open and can be completed by visiting the conference website at: http://mumc2013.zxq.net/ or through a link on the MAA-Michigan site: http://sections.maa.org/michigan/

## Solution to Previous Problem

A census-taker came to my house last fall; he asked how many children I have and how old they are.

*"I have three sons, their ages are integers, and the product of their ages is 36,"* I answered.

*"That's not enough information,"* responded the census-taker.

*"I'd tell you the sum of their ages, but you'd still be stumped."*

*"I wish you'd tell me something more."*

*"Okay, my oldest son Ralph is left-handed."*

**What are the ages of my three sons?**

**Jon Young** was the first to submit a correct solution, followed by **Ben Brow, Charlie Stack,** and **Dalton Potter**. Jon wrote:

The product of the ages of the sons equals 36, so you need to factor 36 into factors of three. Since the sum of the ages would confuse you, some of the factors would add up to the same number; those ages are (9,2,2) and (6,6,1). The clue that the oldest son is left-handed lets us know that the sons are 9, 2, and 2 because if the ages are all integers, the trio (9,2,2) is the only possible solution to have an oldest son.

## Puzzle of the Bi-week

A game is played by tossing a single coin onto a large table on which a grid of congruent squares is drawn. Each square is 25 mm on a side, and the coin has a diameter of 10 mm. If the coin lands entirely within one of the squares, the player wins a prize. If the game is designed so that the coin always lands somewhere on the table (the coin can't roll off the table) **what's the probability** that a player wins a prize?
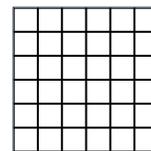
## An Infinitely Better Prize Structure

We know from Calculus II that the infinite series, $1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + ...$ , converges to 2. So starting today, the \$2 prize will be allocated as follows: the 1st student to submit a correct solution will receive \$1, the second will receive \$$\frac{1}{2}$, the third will receive \$$\frac{1}{4}$, and so on.