The Almagest

Alma College
Alma, MI 48801

The bi-weekly newsletter of the Department of Mathematics and Computer Science. Your trusted source for news.

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Senior Presentations

The senior presentations continue this week with talks on **Tuesday** at **4:00** in SAC 109. Please make an effort to attend the talks and support your classmates. And don't forget to come for refreshments at 3:50.

Tuesday, March 19th

Megan Jurek: *Pythagorean Tuning*

Amy Kaufman: *The Museum Problem*

Tuesday, March 26th

Caitlin Closs: *The Pythagorean Theorem*

Russell Hope: *Cardano's Solution to the Cubic*

Tuesday, April 2nd

Andrew Snoblen: *Heron's Formula*

Cognates for the Math Major

In addition to the 36 credits of mathematics every major must take, there are two required cognates: CSC 120 and a course, other than a mathematics course, approved by the Department, with a mathematics prerequisite numbered 113 or higher. Many students take PHY 121, which is a great course. ***BUT, IT IS NOT THE ONLY COURSE***. Below are the approved cognates with prerequisites given in parentheses.

PHY 121 *Physics I* (MTH 113 or 121)

CHM 331-332 *Physical Chemistry* (MTH 122)

ECN 317 *Econometrics* (MTH 116)

ECN 318 *Mathematical Economics* (MTH 113 or 121)

BUS 309 *Finance* (MTH 116)

CSC 220 *Data Structures & Advanced Programming Techniques* (MTH 120)

Reflections of a Senior

In the past few issues, I've written about the great courses that the Alma College Math & C.S. Department has to offer. My next suggestion for all is Math 351: Number Theory. Currently, I am enrolled in the class, and it is a class that truly fascinates me; so much that I plan to study number theory in graduate school. My senior presentation last Tuesday was on perfect numbers -- an interesting topic in Number Theory.

Number theory is one of the purest forms of mathematics, devoted to the study of the integers. Number theorists study things such as perfect numbers, prime numbers, as well as the properties of the integers. The number theory class at Alma focuses a lot on modular arithmetic (something that would be very useful for MTH 221 (Cryptography) when you take that class too). In addition to modular arithmetic, number theory is a class that uses many different proof techniques.

Many famous mathematicians have studied Number Theory from Pythagoras to Carl Gauss. Many of these mathematicians studied in other fields of mathematics, but they studied a lot of number theory to assist in their studies. Number theory is one of the most fascinating subjects to study in mathematics because of its purity and the number of unsolved questions. Math 351 is typically offered in the winter term of odd years, and it's taught by Dr. Molina. *Jon Young*

Summer Math Courses at GVSU

If you live in the Grand Rapids area and you're thinking about taking a summer math course, then you might find that certain course at GVSU. During its spring and summer sessions, GVSU will be offering courses in Calculus I, II, and III;

Differential Equations; Linear Algebra; and Intro to Proofs (our MTH 223). More info can be found at http://bit.ly/GVSUMathSummer.

Here's Another Interesting Pattern

$$1\times 9+2=11$$
$$12\times 9+3=111$$
$$123\times 9+4=1111$$
$$1234\times 9+5=11111$$
$$12345\times 9+6=111111$$
$$123456\times 9+7=1111111$$
$$1234567\times 9+8=11111111$$
$$12345678\times 9+9=111111111$$
$$123456789\times 9+10=1111111111$$

Math Club Stuff

The ***Alma College Math Club*** will be electing a new treasurer, secretary, and vice president. If you're interested, let one of the current officers know. The next meeting is **Tuesday, March 19th** at 9 pm in the Wright Hall lobby.

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

Math Help Center

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

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

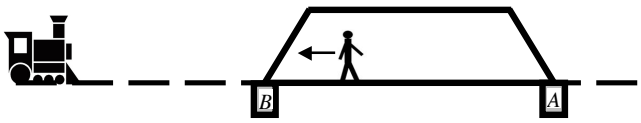
For MTH 121 & 122:
Monday through Thursday: 7-10 pm in SAC 216

Solution to the Previous Problem

There was ONE correct solution submitted for the probability problem in which a coin of radius 10 mm is tossed onto a large grid of squares, each of which is 25 mm on a side. **Jon Young** received the $1 first place prize by correctly observing that a coin landing completely inside a square would necessarily have it's center lie in a square of side length 5 mm. Therefore, the probablility is $\frac{5^2}{25^2}=\frac{1}{25}=4\%$.

Puzzle of the Bi-week

A man walks two-thirds of the distance across a railroad bridge from point *A* to point *B* when he sees a train approaching at the rate of 45 mph. He does a very quick calculation and realizes that if he runs at a certain speed, let's call it *r*, he can make it to **either end** of the bridge and avoid the train. What is this value of *r*?



The first 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.

Student assistant: Jonathan Young
Faculty advisor: Tim Sipka
Distribution: Deb Smith

If you would like to submit an announcement or a short article, please send it via e-mail to Tim Sipka (sipka@alma.edu).