

The Almagest

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

Volume 9 No. 4

October 24, 2016

Alma College
Alma, MI 48801

Math & C.S. Colloquium

Apportionment is a mathematical way to round integers proportionally. Although well known to determine how many seats each state receives in the U.S. House of Representatives, apportionment methods are also used in the U.S. presidential primaries and the general election. In this talk, **Dr. Michael Jones** will examine the geometry of two types of paradoxical behavior that may occur in these settings, using real data when appropriate. We'll also touch on some recent proposed laws and how they would affect the paradoxical behavior. **Dr. Jones** is an Associate Editor at the American Mathematical Society's *Mathematical Reviews* in Ann Arbor, MI.



*“The Mathematics of Apportionment in
U.S. Presidential Primaries and the
General Election”*

Presenter: Dr. Michael Jones

Date: **Tuesday, November 1st**

Time: 4:00

Place: SAC 113

Refreshments at 3:50.



Why Call it "The Almagest?"

Actually, the name of our newsletter was borrowed from an astronomical handbook published around 150 A.D. The author was Claudius Ptolemy, an Egyptian astronomer, mathematician, and geographer of Greek descent.

Almagest came in thirteen volumes and proclaimed that the universe was geocentric—the Earth was the middle of the universe. That, however, is not what most interests a mathematician about *Almagest*. Of more importance to us is the lost mathematical work that it displays.

Hipparchus was a Greek astronomer and mathematician whose work dates to about three centuries prior to Ptolemy's. He made large advancements in trigonometry, primarily spherical trigonometry. Some historians believe that he may have even invented it. Regardless of such disputes, his advancements were important and integral to Ptolemy's writing.

Outside of the *Almagest*, there is little documentation of his work and almost nothing is known

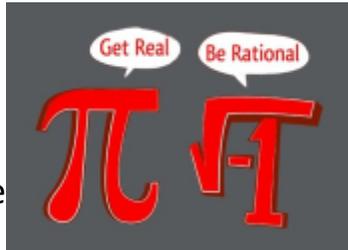
about the life of Hipparchus. Had Ptolemy not made use of Hipparchus's work it may have been lost forever and who knows what knowledge mankind would lack of the universe today.
Cheyenne Kalfsbeek

The Math Club

The Math Club meets **EVERY TUESDAY** at 9:00 pm in Dow 132. Please come.

*Everyone
 is
 welcome!*

Major Field Achievement



All math and computer science majors are **required** to take the MFAT in their respective areas during the **fall term** of their senior year. The exams, created by the Educational Testing Service, provide students with a measure of their level of achievement within their field of study compared to students (majoring in that same area) from other colleges and universities. The exams are given in Dow L2 on **Wednesday, November 16th**.

Check in begins at 6:10 pm and doors close at 6:25.
 The exam begins at 6:30 and ends at 9:00 pm.

Please bring your student ID!

Need Help in Precalc, Calc 1 or Calc 2?

Tutors are available to students in Precalc, Calc 1, and Calc 2 on the following days and times.

Precalc: Mon & Thur, 7:30 – 9 pm in SAC 213.

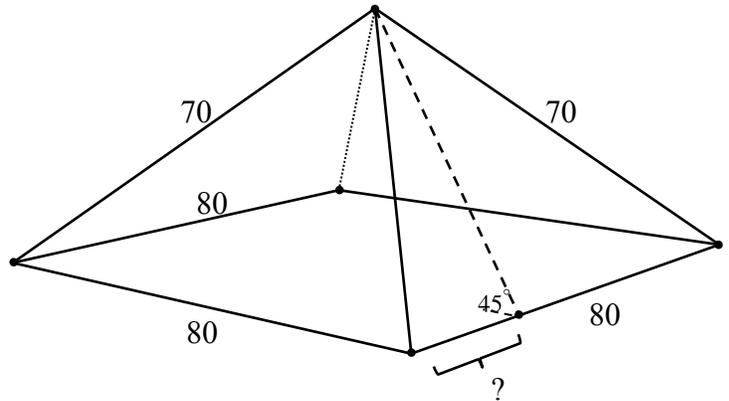
Calc 1: Mon, Tue, & Thur, 7-9 pm in SAC 216.

Calc 2: Tue & Thur, 7:30-9 pm in math bay area.

Solution to Previous Puzzle

Suppose you're standing next to a pyramid with a square base, 80 feet on a side. The distance from each corner of the base to the top is 70 feet. You want to start at some point along the square and walk up a face in a straight line to the top of the pyramid so that your path makes a 45°

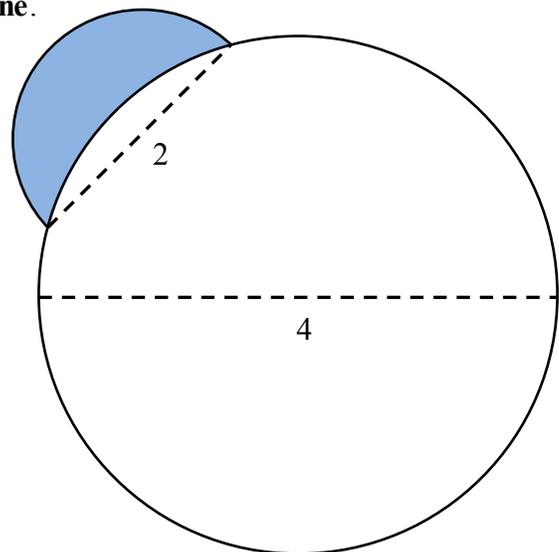
angle with the ground. How far from the corner of the base should you start?



Eva Hengele was the winner of the \$2 prize, submitting her solution of **30**. *Mason Ippel* also submitted a correct solution.

Puzzle of the Bi-week

A circle of diameter 2 intersects a circle of diameter 4 as shown below. Find the *exact area* of the shaded region, which is known as a **lune**.



A prize of **\$2.00** will be awarded to the 1st student who submits a correct solution to Prof. Sipka.

Student assistant:	Cheyenne Kalfsbeek
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).