Department of Mathematics

November 2, 2020

Work Study Jobs for Winter 2021: Math Course Assistants

The math department is looking to hire a few more work-study course assistants. If you qualify for work study, have taken at least one math course at the level of Math 199 or beyond, and have done very well in your math classes, please check-out the math department's advertisement on Handshake. If you have any questions, email the math chair: mathchair@union.edu.

Math and Voting – MAA Special Issue Available

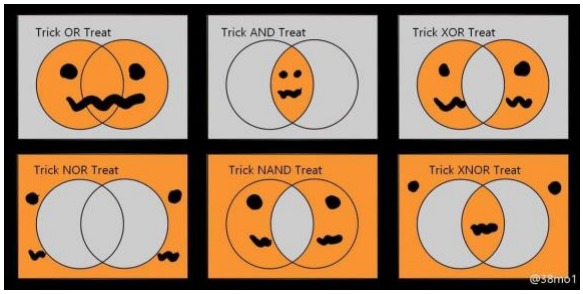
About twice per year, Bonnie Ponce, the Managing Editor of MAA (Mathematics Association of America) Journals, coordinates a virtual special issue (VSI) from MAA periodicals. For this, a timely topic is selected and articles from five of the MAA journals are gathered and featured in a free VSI. For the fall of 2020, the topic is Math and Voting. Each featured article is free to view until the end of 2020: the link to the Math and Voting VSI is below.

think.taylorandfrancis.com/maa-approaches-to-voting

Of special note: one of the articles selected for this issue, *Two-Person Pie-Cutting: The Fairest Cuts*, published in The College Mathematics Journal, was co-authored by Union College Math **Professor (Emeritus) Julius Barbanel** and NYU Professor of Politics, Steven Brams.

Another interesting article, *270: How to Win the Presidency with Just 17.56% of the Popular Vote*, by Chuck Wessell of Gettysburg College, published in Math Horizons, addressed the question, "What is the smallest fraction of the popular vote a candidate can receive and still be elected president?" This question was (seemingly) first addressed in 1961 by the famous mathematical problem solver, George Polya, in the context of the 1960 presidential election. For that election, Polya determined that a candidate could win that election with slightly more than 22 percent of the popular vote. Wessell's article, published in September 2012, updated Polya's work (to necessarily include the District of Columbia among other things) for the 2012 election and showed that only 17.56% of the popular vote was needed to win the presidency. This article is quite readable – and is ready for a 2020 update. Are you up to the challenge?

CALCULUS HELP CENTER!
Sunday, Tuesday, and Thursday nights
7:30 – 10:00pm
Zoom: 995 1676 8139



Some *spooky* Venn diagrams

Problem of the Newsletter – November 2, 2020

A solution to last week's problem has been posted on the bulletin boards in Bailey Hall.

This week's problem: For a real number x, define {x} to be "the fractional part of x," that is, define {x}=x-Floor(x), where Floor(x) is the greatest integer less than or equal to x. For example, {8}=0, and {3.14}=0.14.

Define f(x)=x{x}, and let N be the number of real-valued solutions to the equation f(f(f(x)))=17 for 0≤x≤2020. Find the remainder when N is divided by 1000.

Send solutions to **Professor Paul Friedman** (friedmap@union.edu) by noon, Friday, November 6.