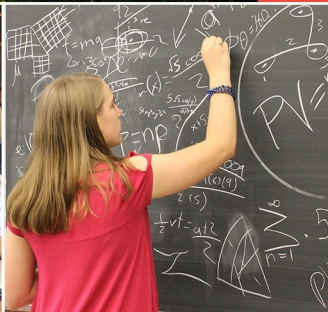summer illinois mathematics camp

SUMMER ILLINOIS MATH CAMP

DEPARTMENT OF MATHEMATICS
University of Illinois at Urbana-Champaign

SIM Camp Epsilon, June 25-29, 2018

- For students starting 8th or 9th grade Fall 2018, ages 12-15
- Open to students who will begin geometry or algebra in the fall

Counting Pigeons and Other Problem Solving Techniques
How do we prove that something is impossible? Campers will learn valuable mathematical techniques such as the pigeonhole principle and coloring arguments. We will ask questions (like "can the spider make his way out of this strange cube?"), convince ourselves that the answer is no, and then use our newfound skills to prove it!

Maximize Your Winnings: Using Math to Understand Games
Which games have a winning strategy? We will play and explore a variety of games involving chance, strategy, social cooperation and anticipating the actions of others. We will use mathematical approaches to help us understand and play games better.

SIM Camp Delta, July 9-13, 2018

- For students starting 9th or 10th grade Fall 2018, ages 13-16
- Open to students who have taken at least one year of algebra

Counting to Infinity (Plus One!)
Is infinity a number greater than all other numbers, or is it the size of a set that is larger than all finite sets? Are these two notions the same, and how do we make them mathematically rigorous? Students will learn how to show that different infinite sets have different sizes; indeed, some infinities are bigger than others! Along the way we develop the basic elements of set theory and grapple with notions of orderings on infinite sets and maps between sets.

Maximize Your Winnings: Using Math to Understand Games
Which games have a winning strategy? We will play and explore a variety of games involving chance, strategy, social cooperation and anticipating the actions of others. We will use mathematical approaches to help us understand and play games better.

SIM Camp Omega, July 23-27, 2018

- For students starting 10th-12th grade Fall 2018, ages 14-18
- Open to students who have had at least one year of algebra

Counting to Infinity (Plus One!)
Is infinity a number greater than all other numbers, or is it the size of a set that is larger than all finite sets? Are these two notions the same, and how do we make them mathematically rigorous? Students will learn how to show that different infinite sets have different sizes; indeed, some infinities are bigger than others! Along the way we develop the basic elements of set theory and grapple with notions of orderings on infinite sets and maps between sets.

From Snowflakes to Seashells: Exploring Fractals
Can a region have finite area and infinite perimeter? Is there a dimension between one and two? Fractals appear all around us in nature and art, and raise many interesting questions like these that challenge our intuition. We will explore these questions and more as we learn about fractals and chaos theory in this course.

Frequently asked questions

Do I need to be on math team to enjoy SIM Camp?
No! While some of the topics will be similar to some competition math, most of it will be different. The focus will not be in solving problems quickly and alone. Instead, the problems that we do in camp can be open ended, and often have more than one solution. Campers spend a lot of time working in groups to discuss problems and come up with solutions together. Thus, having many different perspectives helps the group solve problems better!

Do I need to have good grades in math class to participate in SIM Camp?
We are looking for students who are enthusiastic about math, and this does not always mean getting good grades. If you like making sense of ideas, looking for patterns, and figuring out why things work, SIM Camp is for you!

Is SIM Camp a good place to get tutoring or get ahead in school over the summer?
SIM Camp is not a tutoring program or summer school. It is an opportunity to play with fun mathematical ideas that are not usually covered in school.

How much does SIM Camp cost?
SIM Camp is free to all campers. We are able to reimburse students for the cost of daily travel to camp and provide students with lunch each day.

When will we hear about acceptances?
We do not consider applications until after April 15, and we start sending decisions by May 1. We will continue accepting applications until all camps are full.

Questions?
For more information, or if you have other questions about the program, please contact us at math-simcamp@illinois.edu.

Applications

To apply, visit our website https://math.illinois.edu/SIM.

There is no fee to attend the SIM Camp. Lunch will be provided. Some travel reimbursement is available.

Priority deadline to apply is April 15, 2018.

ILLINOIS

Mathematics

COLLEGE OF LIBERAL ARTS & SCIENCES

Organized by graduate students, the Summer Illinois Math (SIM) Camp is a week-long math day camp for middle and high school students hosted by the Department of Mathematics at the University of Illinois at Urbana-Champaign.

Campers will see the creative, discovery-driven side of mathematics. By showing them some of the ways mathematicians approach problems, SIM Camp hopes to encourage students to continue studying mathematics beyond the high school level.
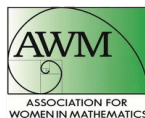
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