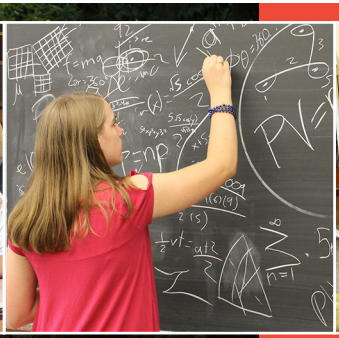
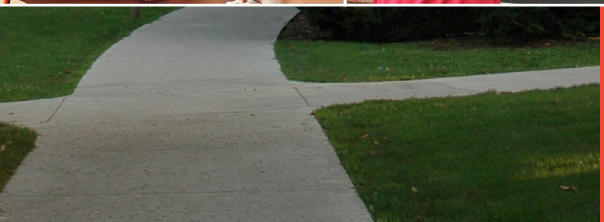
SUMMER ILLINOIS MATH CAMP





ILLINOIS
Mathematics
COLLEGE OF LIBERAL ARTS & SCIENCES

SIM CAMP EPSILON, JUNE 8-12, 2020

- For students starting 8th-10th grade Fall 2020, ages 12-15
- Open to students who will start algebra in the fall or have taken some algebra already

Classical Constructions: Learn to Draw Algebra. What can we do with a compass and a straightedge? These simple tools can be used to create shapes, do arithmetic, and prove fun facts about geometry. This course will teach students geometry as the ancient Greeks saw it, using only tools that were available then.

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? In this course, students will learn how to show that different infinite sets have different sizes; indeed, some infinities are bigger than others! Along the way we will develop the basic elements of set theory and grapple with notions of orderings on infinite sets and maps between sets.

SIM CAMP DELTA, JUNE 22-26, 2020

- For students starting 10th-12th grade Fall 2020, ages 15-18
- Open to students who have taken at least one year of algebra

Classical Constructions: Learn to Draw Algebra. What can we do with a compass and a straightedge? These simple tools can be used to create shapes, do arithmetic, and prove fun facts about geometry. This course will teach students geometry as the ancient Greeks saw it, using only tools that were available then. This is a more advanced version of the corresponding Epsilon course.

Counting, Coloring, and Graphs. In combinatorics, mathematicians answer the question "How many?" through various methods. They also study objects called graphs, which are sets of vertices connected by edges. Campers will learn about properties of graphs, coloring the vertices and edges of graphs, and how mathematicians count.

ABOUT SIM CAMP

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.

SPONSORS

Mathematical Association of America

Department of Mathematics, the Illinois Geometry Lab, and the Association for Women in Mathematics at the University of Illinois at Urbana-Champaign

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