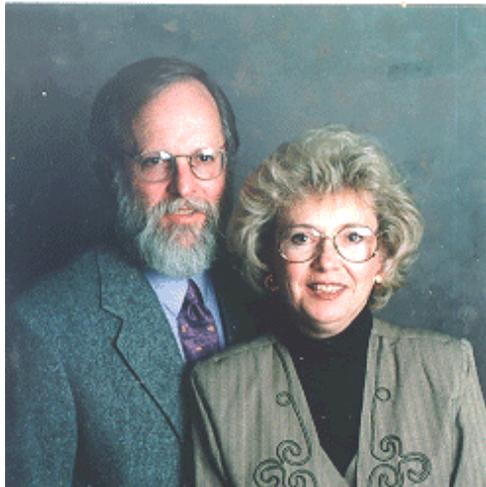


Mathematics News University of Idaho



David and Cynthia Thomas

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New Faculty Member

DAVID A. THOMAS has been appointed Associate Professor of Mathematics Education by the University of Idaho. This is a new position created by the UI administration to engage the secondary mathematics teachers throughout the state. The department chair, Monte Boisen, expects that Thomas will invigorate the Mathematics Education program at UI by providing web-based courses, by conducting workshops for teachers, and by teaching on-campus courses.

Professor Thomas earned his bachelor's degree from Wayne State University in 1968, his M.Ed. from Walla Walla College in 1977 and his Ed.D. from Montana State University in 1983. He has taught high school for 13 years, and has been on the faculty at Walla Walla College, Montana State University, and most recently at Ball State University.

Thomas thinks of himself as a teacher who is deeply involved in the development, testing and dissemination of technology enriched resources for mathematics teachers. His book, "Modern Geometry" was published last year by Brooks Cole Publishing Company. His wife Cynthia has been appointed to the faculty in Mathematics Education at Washington State University. Dave and Cynthia are very excited about returning to the West.

Math Club

The University of Idaho Math Club begins its second year of activities this fall semester. Officers for the coming year are Tim Paulitz, Matt Benke, and Elizabeth Alford, with Mark Nielsen continuing as the faculty adviser. Planned activities include social events (such as dinners, movies, picnics, etc.), competitions (continuing the "math knowledge bowl" format used last year), and service opportunities. We'll also have our first official UI Math Club T-shirt - sure to become the new fashion status symbol on campus.



Tim Paulitz, Elizabeth Alford, Matt Benke
2002-2003 Math Club Officers

Larry Bobisud Retires



LARRY BOBISUD is retiring after 35 years of service to the University. An Idaho native and a graduate of the College of Idaho (now Albertson College of Idaho), he came to the University in 1967 after receiving his Ph.D. from the University of New Mexico and serving for one year as a visiting professor at the Courant Institute

of Mathematics at New York University. He was promoted to Professor of Mathematics in 1974 and served as chair of the department from 1978 till 1982. He was well known for his research on boundary value problems in ordinary differential equations. Larry had six Ph.D. students, Phil Engstrom, Kazimerz Wiesak, Tae Do, Young (Do) Lee, Michael Brennan, and Steve Mills. Being in Differential Equations it is no surprise that his favorite course to teach was calculus. Within the department he could be counted on for his temperate judgement and amazing efficiency.

He will live in Moscow with his wife Helen and their cat Hannah. He will continue his hobbies of building model airplanes and model steam engines, and flying radio controlled model airplanes.

Bill Royalty Retires



With his retirement this year BILL ROYALTY completes more than 40 years of teaching Mathematics. His high school physics teacher instilled in him a love of the mathematics in physics. This led to his bachelor's degree in Mathematics and Physics at the University of Iowa in 1959. As a

young Air Force officer he worked with computers and then taught at the newly opened Air Force Academy. After his discharge he returned to the University of Iowa for graduate school in Mathematics, studying Functional Analysis with Sterling Berberian and Fixed Point Theory with Art Kirk. Royalty came to the University of Idaho in 1969 with his new Ph.D. degree as an Assistant Professor of Mathematics. He was promoted to Professor of Mathematics in 1994. His love of the mathematics of physics continued into his research where he applied functional and topological methods to singular boundary-value problems in differential equations. He especially enjoys teaching calculus to engineering students and analysis to mathematics students. His proudest achievement is the success of his students in class and in their careers. His clever play on words are well known to his students and colleagues alike.

Bill's varied interests also include listening to opera, exploring Italian art, climbing mountains, programming in Java, and reading about international politics and economics. Bill and his wife Ginny, a fifth grade teacher at Lena Whitmore School, will remain in Moscow. A trip to the mountains or to Italy is possible.

Budget Challenges

I am sure that you are well aware of the serious cuts to the University of Idaho budget last year, this coming year and possibly the year after. Throughout this difficult time, the Mathematics Department remains committed to providing our students with the best educational experience possible. It is important to recognize that we were not wasting our resources when we were fully funded and consequently the cuts will have negative impacts. Certainly, having fewer faculty and resources endangers the quality of our students' education. It is unavoidable that the cuts will make it more difficult for students to be successful and will create some hardships. During such times we are particularly appreciative of our supporters who have so generously contributed to our gift fund. By designating the Mathematics Department as the recipient of their gift, our contributors have enabled us to offer scholarships to keep top students here and to do numerous things that build community. It is particularly important now to let our students know that we care about them, their dreams and their successes. Thanks for your help.

Monte Boisen

Recent Graduates

DAN BRODOCK graduated in May with a B.S. in Applied Mathematics. He will work in the Pension Fund office at Buck Consulting in Secaucus, New Jersey.

RYAN CRISMAN graduated in December with a B.S. in Mathematics. He was commissioned an Ensign in the U.S. Navy.

CHAD FISCHER graduated in May with a B.S. in Mathematics. He was commissioned an Ensign in the U.S. Navy and will be attending Naval Flight School in Pensacola, Florida.

DAN FRAZIER graduated in May with a B.S. in Applied Mathematics.

AANA HESTER graduated in May with a B.S. in Applied Mathematics and Economics.

MELISSA HODGE graduated in December with a B.S. in Applied Mathematics. She is continuing at UI to earn her teaching certificate.

TIM HOUSEHOLDER graduated in May with a B.S. in Applied Mathematics. He was commissioned an Ensign in the U.S. Navy and will attend a Naval school in Charleston, South Carolina to learn to drive a submarine. He also received the Naval Submarine League Outstanding Achievement Award.

ERIC MACK graduated Magna Cum Laude in May with a B.S. in Mathematics. He is a graduate student in mathematics at UI.



Recent Graduates, continued



JAMI MACKI graduated in May with a B.S. in Mathematics. She also has a B.S. in Secondary Education. She will be teaching mathematics at a high school just north of Atlanta, Georgia.

ANGIE MELISSA graduated in May with a B.S. in Applied Mathematics.

JARED MILLER graduated in May with a B.S. in Mathematics.

MICHAEL MILLER graduated in December with a B.S. in Applied Mathematics.

RUSSELL MILLER graduated in May with a B.S. in Mathematics.

PATRICK O'CONNELL graduated Cum Laude in December with a B.S. in Applied Mathematics. He completed his B.S. in Computer Science in May and is attending graduate school at UI in Computer Science.

SARAH POTRATZ graduated in May with a B.S. in Mathematics.

JEREMY WEEKS graduated in May with a B.S. in Mathematics. He will work for the China Lakes Naval Weapons Center in California.

BRANDY WIEGERS graduated Summa Cum Laude in May with a B.S. in Mathematics. She also earned a B.S. in Biological Systems Engineering and a Honors Certificate from the UI Honors Program. The College of Letters and Sciences presented Brandy with the Lindley Award. This is the highest award that a student in the college can receive. She has received a fellowship to graduate school in Applied Mathematics at the University of California at Davis.

ADAM WINN graduated in May with a B.S. in Applied Mathematics.

SARITA CUPP graduated in August with an M.A.T. in Mathematics.

MARK DANIELS graduated in August with an M.A.T. in Mathematics. He is currently the math chair at McNeil High School in Austin, Texas. He teaches AP Calculus, AP Statistics, and AP Physics. He now has an adjunct professor's position at Letourneau University's extension office in Austin, Texas.

KATHLEEN JUDY graduated in December with an M.A.T. in Mathematics. She will continue teaching math at Eastern Idaho Technical College.

VAUGHN LITTLEJOHN graduated in August with an M.A.T. in Mathematics.

SHEENA MCLEOD graduated in August with an M.A.T. in Mathematics.

KARLA MITCHELL graduated in May with an M.A.T. in Mathematics. After receiving her B.S. degree at UI she taught high school math for 9 years. She began teaching as an adjunct instructor at North Idaho College in the Fall of 2001 and continues to teach a few math classes each semester.

KAROLYN MORRIS graduated in May with an M.A.T. in Mathematics.

DANIEL PATRICK graduated in August with an M.A.T. in Mathematics.

LEAH PIERCE graduated in December with an M.A.T. in Mathematics.

LAURA PITTARD graduated in May with an M.A.T. in Mathematics.

MICHELE RAUENHORST graduated in August with an M.A.T. in Mathematics.

REBECCA WRIGHT graduated in May with an M.A.T. in Mathematics.

KATIE CHRISTENSEN graduated in May with a M.S. in Mathematics.

EDUARD GLUSHCHENKO graduated in May with a M.S. in Mathematics. He is working as a Software Engineer with Orielle in Moscow, Idaho.

PAUL HOWARD graduated in May with a M.S. in Mathematics. He will teach mathematics at Cascade College in Portland, Oregon.

VLAD MININ graduated in May with a M.S. in Mathematics. He will be attending graduate school at the School of Medicine at UCLA in the Fall to work on a PhD in Biomathematics.

ZACH SAUL graduated in May with a M.S. in Mathematics. He will be attending the University of California at Davis to work on a PhD in Computer Science. He plans to study Bioinformatics.

ANDREW SKRYZHYNKSYI graduated in May with a M.S. in Mathematics. He will be a M.S. candidate in Computer Science at York University in Toronto, Canada.

BOB WILLIAMSON graduated in May with a M.S. in Mathematics. He will be a PhD candidate in mathematics at the University of Kansas in Lawrence, Kansas.

Student News

Dean's List

Each semester the Dean of the College of Letters and Science lists those students who have received a grade point average of 3.3 or better and have taken at least 14 credits for a letter grade. The Mathematics majors on the Spring 2002 Dean's List are:

ELIZABETH ALFORD	TRAVIS BEMROSE
MATTHEW BENKE	JAYNE BIRD
AARON BLUE	SHANNON BOOTH
DANIEL BRODOCK	BRIAN DORGAN
KRISTINA GOODSON	SARAH HIRD
CHELSEA HUFFMAN	JESSE HUSO
TYREL JOHNSON	HEIDI KELSEY
MATTHEW LABRUM	LINDSEY MARSHALL
JESSICA MOTTERN	DAVID NADLER
LOGAN OWEN	TIMOTHY PAULITZ
MATTHEW PETERSEN	DANIELLE SEBRING
MICHELE VALIQUETTE	DARCY WAYBRIGHT
BRANDY WIEGERS	STACEY WILKINS

Putnam Results

MUEEN NAWAZ did very well in the 2001 Putnam Competition, sponsored by the Mathematics Association of America. He placed in the top 10% of the 2,900 undergraduate mathematics students participating nationwide. In last year's competition he placed in the top 20%. BRIAN DORGAN placed in the top 50%.

The questions are always difficult. Students who have had a variety of mathematics courses and enjoy challenging problems are invited to participate. A seminar in preparation for the exam will be offered this semester. See Ralph Neuhaus in Brink 302 for details.

Congratulations on a Job Well Done!

Math Puzzler Solution #1

The proof uses what is called the pigeonhole principle. Any face of a polyhedron has at least three edges. Let m be the maximum number of edges on the faces. So the possible number of edges for a face is 3, 4, . . . , or m . The face with m edges has m adjacent faces. So there are at least $m+1$ faces. There are more faces than the $m-2$ possible numbers of edges for a face. Hence at least two of the faces must have the same number of edges.

Outstanding Senior in Mathematics



Eric Mack, Monte Boisen, Brandy Wieggers

BRANDY WIEGERS and ERIC MACK were given the 2002 Outstanding Senior Award in Mathematics. This award is presented annually to the seniors who have shown exceptional mathematical talent. Each student honored is given a cash award and is recognized on an engraved plaque in the Mathematics Department Office.

REU 2002



Part of the 2002 REU participants: *Clockwise from the left:* Antonio Kirson (University of California, Berkeley), Paul Baginski (Carnegie Mellon University), Seoyoung Kim (Rice University), Senior Instructor Dora Bialostocki, Andy Schultz (Stanford University), Professor Paul Joyce, and Bi Ji Wong (Pomona College).

Undergraduate Research

This year several undergraduates will have the opportunity to engage in research. As part of a grant received by PAUL JOYCE, STEVE KRONE, and FRANK GAO up to six undergraduates will assist in a biocomplexity project. This year's student participants are ELIZABETH ALFORD, MATT LABRUM, NATE MERCALDO, ERIC SAUERAKER, and MICHAEL ELFERING

Actuarial news

ARE THERE JOBS FOR ACTUARIES?

In October, an actuary who is a graduate of the University of Idaho will be on campus to talk with students about job opportunities and the duties of an actuary. Look for the announcement.

TESTS, TESTS, TESTS

Among all the other things, students seeking to become actuaries need to be concerned about the Actuarial Exams. These exams are incredibly important. To become an Associate of the Society of Actuaries you need to pass six of their exams. This is not easy. Fewer than 50% pass an exam the first time they take it. Fulfilling the requirement for the actuarial science option at UI covers most of the content of Exams 1 and 2, and provides background knowledge for the content of the remaining exams. The questions on the exams are not the usual textbook questions. They frequently apply mathematics to risk problems and also ask you to draw conclusions. Students need intense preparation.

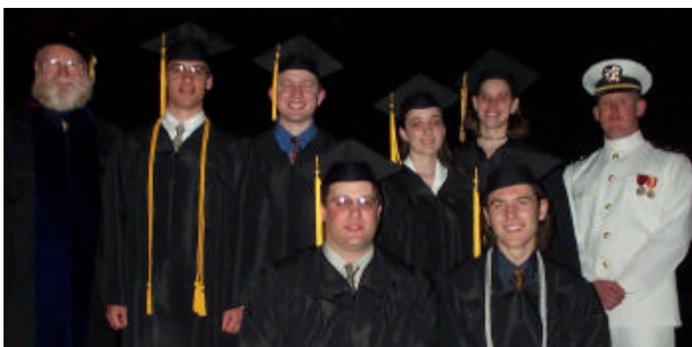
We offer two seminars to help you prepare for Exam 1. In the fall we offer Math 255 to review Calculus and in the

Spring we offer Math 455 to review Mathematical Probability. Both semesters we review questions taken from old exams. We also emphasize that the student search for the answer. This is important because when you are preparing for the future exams while on the job you will be studying on your own. It is very worthwhile to develop those skills now.

We also will arrange assistance in studying for Exam 2, which covers Economics, Finance, and the Theory of Interest. Review material from previous exams is also available. See Ralph Neuhaus in Brink 302 to arrange for assistance.

Exams 3 through 6 are usually taken after graduation while you are employed. Firms normally allow you release time to study for an exam. The required courses for the Actuarial Science option are background knowledge for the content of these exams. Exams 1 and 2 can be taken in Moscow on November 6 and 7 or on May 21 and 22. Applications for the November exam must be received before September 24, 2002 and before April 1, 2003 for the May exam. See Ralph Neuhaus in Brink 302 for an application.

2002 Mathematics Graduates



A portion of the 2002 Mathematics Graduates
 Back, L-R: Monte Boisen, Adam Winn, Sarah Potratz,
 Aana Hester, Chad Fischer,
 Front, L-R: Dan Brodock, Eric Mack

Check us out on the web:

www.uidaho.edu/LS/Math

Internet Math Challenge



Looking for a mathematical challenge to stimulate the interest of a pre-college student? Try out the *Internet Math Challenge*. The IMC is a web-based problem-solving contest featuring prizes for solving weekly math puzzles. Students can email their solutions and receive feedback from the IMC staff. The puzzles are designed to be fun, and to require few prerequisites beyond cleverness, so students of all ages can participate. Prizes include two specially designed IMC T-shirts given each week, plus monthly prizes of a graphing calculator.

The UI Math Dept. has sponsored the Internet Math Challenge each school year since 1996, with supervision by Professor Mark Nielsen. You can find IMC at <http://www.uidaho.edu/LS/Math/imc>

Polya Extended Participants



Some of the 2002 Polya Extended participants hard at work on their projects.

Faculty and Staff Activities

MONTE BOISEN participated in the Governor's Task Force on Mathematics Education in May.



KIRK TRIGSTED attended the Summit on Pre-Calculus instruction sponsored by Prentice Hall in Key Largo, Florida in June.

MARK NIELSEN attended the Combinatorics and Geometry Seminar at the University of Washington in May.

PAUL JOYCE gave an invited talk at the International Conference on Statistics in Honolulu, Hawaii in June.



The Department was awarded a grant by the State Board of Education to augment Calculus instruction by developing technological learning tools to present Calculus topics in an interactive manner. MONTE BOISEN will direct the work and will be assisted by MARK NIELSEN, DORA BIALOSTOCKI, EROL BARBUT, and BILL ROYALTY.

PAUL JOYCE and STEVE KRONE gave invited talks at the Western Section Meeting of the American Mathematical Society in Portland, Oregon in June and at the annual meeting of the Society of Mathematical Biology in Knoxville, Tennessee in July.

MARK NIELSEN has received three awards for teaching this year. The UI Alumni Association presented him with their Alumni Award for Excellence at their December banquet. The UI/WSU Naval ROTC program presented him with their Excellence in Teaching Award.



In addition, he was chosen as one of UI's best professors by students balloting in the Argonaut's Best of UI 2002 poll.

DAVE THOMAS presented a paper at the International Conference on Teaching Statistics this summer in Cape Town, South Africa.

STEVE KRONE was invited by the Department of Mathematics at the University of Wyoming to speak to the students and faculty on Math and the Genome. This was one of the main features of the university's celebration of Math Awareness week.



Professor Martin Lascoux of Uppsala University in Sweden invited PAUL JOYCE and STEVE KRONE to give a one week short course on gene genealogies to the graduate students in the Department of Genetics.

GAIL ADELE presented an invited workshop, Geometry and the Imagination, for teachers of grades 3-8 at the National Council of Teachers of Mathematics Annual Conference in Las Vegas, Nevada in April.

Math Puzzler Solution #2

This game was invented by Professor David Gale of Brown University, and appears in one of Martin Gardner's books. It is marketed under the name *Bridg-It*. The game will not end in a draw. Gardner says that the first player can always win if his/her first move is to connect the two dots in the center. He says that there are too many different moves to describe the rest of the strategy but by careful playing the first player can always win.

Summer Workshops

GAIL ADELE and CYNTHIA PIEZ conducted a Creative Geometry Workshop for elementary teachers this summer. The workshop focused on the mathematical content underlying the geometry taught in elementary schools and emphasized a hands-on exploratory approach using manipulative material.



CLANCY POTRATZ conducted a Data-Driven Workshop in McCall, Idaho for secondary and middle school mathematics teachers. The aim is to provide mathematics teachers with hands-on projects for the students to solve problems by collecting data and applying the mathematics that they have learned.



ARIE BIALOSTOCKI conducted a Research Experience for Undergraduates this summer. This project gives bright undergraduate students from around the country an opportunity to be involved in mathematics research. It emphasizes mathematical discovery, professional writing, and oral communication.



MONTE BOISEN, HEATHER HOWELL, and RODOLFO LONG conducted a Polya Extended Workshop this summer for junior and senior high school mathematics teachers. The teachers spent 3 weeks in Moscow learning how to integrate web-based materials into the curriculum. You can learn more about the workshop by visiting the website:

www.polyaextended.com

Past Graduates

JACK HOUDSHELL received his master's degree from the Naval Postgraduate School in Monterey, California. He graduated from UI in 1993 with a B.S. in Applied Mathematics.

CRAIG BEISEL has been accepted into the graduate program in Mathematics at the University of Arizona. He graduated from UI in 2001 with a B.S. in Mathematics.

YOUNG (DO) LEE is an assistant professor of mathematics at Manchester College in North Manchester, Indiana. She received an M.S. in Mathematics in 1986 and her Ph.D. in Mathematics in 1989 from UI.

GARY PETERSON is a rancher in Forks, Washington and teaches part time at Peninsula College. He graduated from UI in 1974 with an M.S. in Mathematics.

POTERT COGGINS received his PhD in Education from UI in 2002. He earned an M.A.T. degree in Mathematics from UI in 1993.

GRANT NOLLMANN received his Master of Accountancy degree from UI in 2002. He earned a B.S. degree in Mathematics from UI in 2000.

HENRY ZWICK has completed his 12th year at the College of Eastern Utah in Price, Utah. He is an instructor in Mathematics, Computer Science, and Engineering. He just became head of the Engineering Department. He earned his M.S. in Mathematics from UI in 1977.

MARCELO GUMUCIO is retired and a visiting scholar at Stanford University. He worked for General Electric, Hewlett Packard, Memorex, and Northern Telecom. He has been the president of Large Storage Systems and Cray Research. He graduated from UI in 1963 with a Master's in Mathematics.

KATHLEEN AYERS is now the Associate Chair of the Mathematics Department at Boise State University. She received her PhD in Mathematics from UI in 1983.

New Master's Graduates!



Some of the 2002 Master's in Mathematics Graduates!
Left to Right : Katie Christensen, Bob Williamson, Vlad Minin, Zach Saul, Eduard Glushchenko, and Paul Howard.

New Graduate Students

KARI ANDERSON received her B.S. Ed in Mathematics Education from UI in 2001. She will be a candidate for an M.A.T. and a teaching assistant in Mathematics.

ERIC MACK received his B.S. in Mathematics from UI in 2002. He will be a candidate for an M.S. in Mathematics and a teaching assistant in Mathematics.



AMBER JOLLY received her B.S. Ed from UI in 2002. She will be a candidate for an M.A.T. and a teaching assistant in Mathematics.

JAIMOS SKRILETZ received his B.S. in Mathematics and Physics from UI in 2000. He will be a candidate for an M.S. in Mathematics and a teaching assistant in Mathematics. He has been teaching at Boise State University.



VALENTINA SOLDATENKOVA received her bachelor's and master's degrees in Chemical Physics from Moscow Institute of Physics and Technology in 1996. She earned an M.S. in Applied Mathematics from Washington State University in December 2001. She will be a candidate for an PhD in Mathematics and a teaching assistant in Mathematics.

YONGTAU "GRANT" GUAN received his bachelor's degree in Biomedical Engineering from Southeast University in Nanjing, China and his master's degree in Applied Mathematics from the University of Minnesota, Duluth. He will be a research assistant in Mathematics and a PhD candidate in Mathematics.

XUE ZHONG received her bachelor's degree in Computational Mathematics and her master's degree in Statistics from Nanjing University. She will be a research assistant in Mathematics and a M.S. candidate in Mathematics.

JOSE PONCIANO received his B.S. from Universidad del Valle de Guatemala in 1997 and his M.S. in Ecology from Universidad Austral de Chile in Valdivia, Chile. He will complete his Master's degree in Statistics, be a research assistant in Mathematics and a PhD candidate in Bioinformatics.

BOB WEIKEL received his B.S. in Mathematics in 2001 from Boise State University. He will be a candidate for an M.S. in Mathematics.

YING LIU received her Bachelor's degree in Energy Engineering from the University of Science and Technology in Beijing in 1997. She will be a candidate for an M.S. in Mathematics.

DANIEL BURTON received his B.S. in Mathematics and Philosophy from UI in 2001. He will be a candidate for an M.S. in Mathematics.

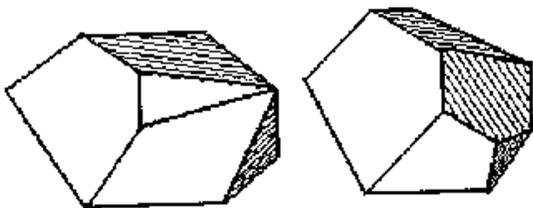
University of Idaho
Department of Mathematics
300 Brink Hall
PO Box 441103
Moscow, ID 83844-1103

Fall 2002



Math Puzzlers

#1



Must a polyhedron have at least two faces with the same number of edges?

You may have read that there are exactly five regular polyhedra. Any two faces of a regular polyhedron are congruent so each face has the same number of edges. Examples of polyhedra where the faces are not congruent are a rectangular box or the figures above. A polyhedron in general need not have congruent faces or faces with the same number of edges. Can you show that at least two of the faces of a polyhedron have the same number of edges?

#2

BRIDG-IT is a two-person game played on a piece of paper with 24 dots, 12 red and 12 black, as shown below. One player plays the black dots; the other plays the red dots. Each player in turn draws a horizontal or vertical line that connects two adjacent dots of his/her color, without crossing a line of the other color. Red wants to form a continuous path, with a red pen, from the top row of dots to the bottom row. Black wants to form a similar path, with a black pen, from the left column of dots to the right column. The first player to connect such a path wins the game. The paths need not be straight and each player can use his/her lines to block the opponent.

Let R be a red dot and B be a black dot.

	R	R	R	
B	B	B	B	
	R	R	R	
B	B	B	B	
	R	R	R	
B	B	B	B	
	R	R	R	