



WASHINGTON STATE COMMUNITY COLLEGE
MATH CONFERENCE

April 23 - 25, 2009

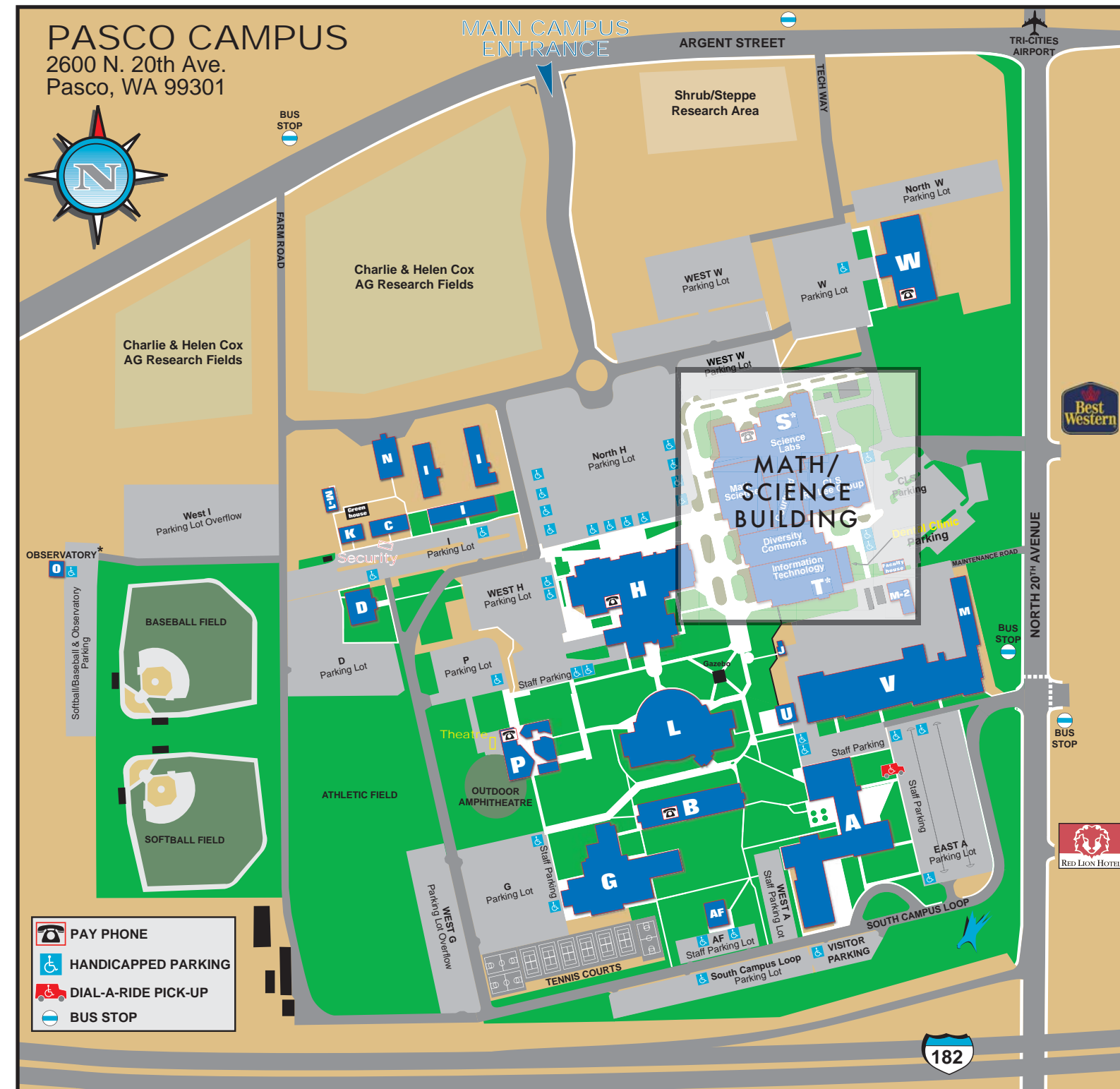
Columbia Basin College
Pasco, Washington

WASHINGTON STATE COMMUNITY COLLEGE MATH CONFERENCE

CONFERENCE SCHEDULE 2009

DATE	TIME	EVENT	LOCATION
Thursday, April 23, 2009	5:00 – 9:00 pm	Registration	Red Lion Hotel
	6:30 – 7:30 pm	Dinner Banquet	Red Lion Hotel
	7:30 – 8:30 pm	Pete Wildman Opening Speaker	Red Lion Hotel
	8:45 – 10:30 pm	Hosted Social	Red Lion Hotel
	Friday, April 24, 2009	7:15 – 8:15 am	Breakfast Buffet
Saturday, April 25, 2009	7:30 – 8:30 am	Registration	CBC Math/Science
	8:30 – 9:30 am	Session I	CBC Math/Science
	9:45 – 10:45 am	Session II	CBC Math/Science
	11:00 am – noon	Session III	CBC Math/Science
	12:15 – 1:45 pm	Lunch Buffet	Red Lion Hotel
	12:45 - 1:45 pm	Jerry Johnson Keynote Speaker	Red Lion Hotel
	2:00 – 2:30 pm	Session IV	CBC Math/Science
	2:45 – 3:15 pm	Session V	CBC Math/Science
	3:30 – 4:00 pm	Discussion Groups/Exhibit Hours	CBC Math/Science
	4:00 – 4:30pm	Dedicated Exhibit Hours	CBC Courtyard
	4:30 – 6:30 pm	Activities	Various Locations
	6:30 – 7:30 pm	Dinner Banquet	Red Lion Hotel
	7:30 – 8:30 pm	Ed Burger Keynote Speaker	Red Lion Hotel
	8:45 – 10:30 pm	Game Night	Red Lion Hotel
	7:30 – 8:30 am	Breakfast Buffet	Red Lion Hotel
9:00 – 10:00 am	Session VI	CBC Math/Science	
10:15 – 11:15 am	Session VII	CBC Math/Science	
11:15am – noon	Discussion Groups/Exhibit Hours	CBC Math/Science	
12 noon – 1:30 pm	Lunch Buffet	CBC H Building	
12:30 – 1:30 pm	Nihar Jindal Keynote Speaker	CBC H Building	

MAPS



WASHINGTON STATE COMMUNITY COLLEGE MATH CONFERENCE

GUEST SPEAKERS

PETE WILDMAN – THURSDAY EVENING SPEAKER SPOKANE FALLS COMMUNITY COLLEGE

POISSON'S EXCELLENT MATHEMATICAL DAY

Do you know Simeon Poisson? During his "time" here on earth he published more than 300 papers. Many ideas in mathematics and the sciences are due to his great work (Poisson's Integral, Poisson's distribution are just two examples). However, during his time here on earth he did not get the recognition he really deserved – especially from his snotty French counterparts! Because of this he is making a special "one night only" appearance in one of the most mathematical places around – that being Pasco, Washington! You will get the chance to meet Mr. Poisson as he presents an epic, fun-filled evening of song, dance, and of course math. Don't miss this once in a lifetime opportunity!

Personal Information: Pete Wildman is an instructor of mathematics at Spokane Falls Community College. This is his first year as a resident in the great state of Washington. Prior to his move here, he worked for 16 years at Casper College in Casper, Wyoming where he was an instructor of mathematics and department chair. He has been involved with a number of national math organizations including AMATYC of which he served on the national board. But despite all of this work in mathematics, he is really a frustrated actor and tries to work on this frustration by creating and performing mathematical plays for willing and unwilling audiences.



DR. JERRY JOHNSON – FRIDAY AFTERNOON SPEAKER WESTERN WASHINGTON UNIVERSITY

AN ALBUM OF MATHEMATICAL GEWGAWS, VAGARIES, AND WHIMSICALITIES

To most people, mathematics is considered to be the most rational of the sciences. Yet, mathematics-- its concepts, its problems, and its history-- is filled with oddities that can excite, educate, frustrate, and cause the loss of sleep....for both teachers and students. This talk explores some of these oddities!

Personal Information: Jerry Johnson, a mathematics professor at Western Washington University, teaches all levels of mathematics and focuses on preparing quality teachers of secondary mathematics. During the past 38 years, he has taught mathematics to students from ages 4 to 80+, stressing that the learning of mathematics is not only possible but it should be both fun and useful. His primary interests in mathematics are problem solving, the history of mathematics, modern geometries, the appropriate use of technologies, and humor in the classroom.



DR. EDWARD BURGER – FRIDAY EVENING SPEAKER WILLIAMS COLLEGE

CRAFTING CREATIVE THINKERS

Despite conventional wisdom and traditional thinking, our students' mathematics classes can offer life lessons that transcend the narrow confines of solving for "x". In fact, their mathematics courses can be the home of wild imagination and creativity. It can be the place in which students are taught how to be creative and how to think effectively. These important templates of thinking can inform and enhance our students' abilities, not only in all their other classes, but in their lives beyond our school grounds. In this presentation we will offer an enlivening and engaging vision for a truly meaningful mathematics experience.

Personal Information: Edward Burger is a professor of mathematics at Williams College. His research interests are in number theory, and he is the author of more than 30 research articles and 12 books including *The Heart of Mathematics: An invitation to effective thinking* (winner of a 2001 Robert W. Hamilton Book Award). Burger was awarded the 2000 Northeastern Section of the MAA Award for Distinguished Teaching and 2001 MAA Deborah and Franklin Tepper Haimo National Award for Distinguished Teaching of Mathematics. The MAA named him the 2001-2003 Polya Lecturer. In 2002-2003, he was the Ulam Visiting Professor at the University of Colorado at Boulder, where he was awarded the 2003 Residence Life Teaching Award. In 2004, he was awarded Mathematical Association of America's Chauvenet Prize and in 2006, he was a recipient of the Lester R. Ford Prize. In 2007 and 2008, he received two awards for his video work. In 2007, Williams College awarded him the Nelson Bushnell Prize for Scholarship and Teaching and this year the College named him the Gaudino Scholar. Burger is an associate editor of the *American Mathematical Monthly* and a trustee of the Educational Advancement Foundation. In 2006, *Reader's Digest* listed Burger in their annual "100 Best of America" as America's Best Math Teacher.



DR. NIHAR JINDAL – SATURDAY AFTERNOON SPEAKER UNIVERSITY OF MINNESOTA

THE MATHEMATICS OF WIRELESS COMMUNICATION (E.G., CELLULAR PHONES)

Although people use wireless communication very extensively in their lives -- most likely through the use of cell phones, WiFi, and broadcast radio/TV -- most people are probably not aware of the rich mathematics that underpin the design of wireless communication systems (the same is also true for wired communication systems, e.g., DSL and cable modems). My objectives are to (a) convey some of the basic fundamentals of wireless communications and (b) describe some of the key mathematical tools used in wireless system design, with the hope that mathematics instructors in the audience will be able to pass some of these ideas down to their students and, hopefully, inspire more students to study wireless communications or other engineering disciplines.

Personal Information: Nihar Jindal is an assistant professor in the department of Electrical and Computer Engineering at the University of Minnesota. He conducts research on the topic of wireless communication, which is one of the more mathematical disciplines of electrical engineering. Using tools from probability and information theory, he strives to design higher bandwidth wireless systems. For example, electrical engineers have developed algorithms that allow signals to be transmitted and received from multiple antennas, thereby allowing for a significant increase in data rate in cellular systems (most visible base stations have multiple antennas) and in Wi-Fi networks (most new Wi-Fi access points are employing multiple antenna technology). He actively publishes in IEEE (Institute of Electrical and Electronics Engineers) journals such as *IEEE Transactions on Wireless Communications* and *IEEE Transactions on Information Theory*, and also collaborates with industrial partners such as Motorola and Alcatel-Lucent.



WASHINGTON STATE COMMUNITY COLLEGE MATH CONFERENCE

SOCIAL EVENTS

THURSDAY

8:45 TO 10:30 PM

Social
Hosted by Pearson Higher Education
Location: Red Lion

FRIDAY

5:00 TO 6:00 PM

Winery Tour
Pre-Registration Required
Meet at Red Lion for carpooling
Location: Preston Winery

4:30 TO 6:00 PM

Ping Pong Tournament
Pre-Registration Required
Location: H building, CBC

8:45 TO 10:00 PM

Board Games and Activities
Meet with friends, play one of our games, or bring your own!
Location: Red Lion

SATURDAY

NOON TO 1:30 PM

Lunch at CBC
Pre-Registration Required
Featuring Keynote Speaker Nihar Jindal
Location: H building, CBC

SESSION ABSTRACTS

MS. CRYSTAL RAVENWOOD

FRIDAY 8:30 – 9:30 AM ROOM S226
REFLECTIVE TEACHING USING THE CRITICAL INCIDENT QUESTIONNAIRE

Many mathematics instructors wish they had the time to actively reflect on their performance in the classroom, and modify it to more effectively meet student needs. In this presentation, we will examine Stephen D. Brookfield's Critical Incident Questionnaire (CIQ), and learn how it can be used to facilitate reflective teaching without significantly impacting an instructor's workload. Techniques for writing effective CIQ questions also will be discussed.

DR. PATRICK GARDNER

FRIDAY 8:30 – 9:30 AM ROOM S230
(30 SEATS MAX)
LINEAR ALGEBRA APPLICATIONS USEFUL IN AN INTRODUCTORY COURSE

Many Linear Algebra texts reflect the numerous applications of the subject to "real world" problems and we use them in the classroom both to motivate study and to provide insight into various topics. For example, the text used at Columbia Basin College, Elementary Linear Algebra by Howard Anton and Chris Torres, contains a large special section with development and exercises for 21 applications. In this session, we will explore three other examples: (1) a Singular Value Decomposition problem that unifies the content of an introductory course, (2) a Finite Element Method used to model groundwater flow in an environmental study, and (3) a neural network case highlighting the potential pitfalls associated with unquestioned acceptance of "black box" results. Participants will be invited to share their own favorite applications.

MRS. BIRGIT HINDMAN

FRIDAY 8:30 – 9:30 AM ROOM S233
SEEING THE LIGHT - LIGHTING CALCULATION IN COMPUTER GRAPHICS

Lighting calculations are critical for rendering a realistic scene in computer graphics. They give objects the appearance of shape and texture. I will explain the mathematics behind several different lighting models that are commonly used in the computer graphics field.

DR. MEG BARTRAND

FRIDAY 8:30 – 9:30 AM ROOM S247
FUN AND GAMES, SONG AND DANCE, PROJECTS AND PRESENTATIONS TO SPARK INTEREST IN AND SOLIDIFY LEARNING FOR MATHEMATICS STUDENTS

As a frustrated kindergarten teacher wannabe, I've tried several fun activities and projects with my students in a variety of classes. I believe that students need to be able to not just do

the math, but also communicate the math they've learned. The projects facilitate this communication, provide alternate ways of learning to accommodate a variety of learning styles, improve attitudes toward mathematics, and reinforce key concepts for the students.

DAVID NELSON

FRIDAY 8:30 – 9:30 AM ROOM S248
CLIENTS IN THE CLASSROOM

Occasionally I get calls from members of the local community with math questions. As these often relate to the topics I am teaching, I invite the clients to present their problems to my students and have the students reply. This presentation will feature a visit from a client, along with examples of student work. Come see how you can add consulting work to your classroom activities.

MR. GREGG HARBAUGH AND
TOPHE ANDERSON

FRIDAY 8:30 – 9:30 AM ROOM S249
READING ASSIGNMENTS FOR MATH: USING PREPARATORY ASSIGNMENTS TO PROMOTE STUDENT ENGAGEMENT

Preparatory or preliminary assignments are ubiquitous in most college classes. One would not entertain a discussion of Hamlet without having first read the play. Yet, many students see math class as the sole introduction to new material, and they cannot imagine how preparation for the lesson might be one of their responsibilities. This session will discuss the benefits of using preliminary reading assignments as a means to prepare students to learn about new material in mathematics lectures. The discussion will present theoretical motivation for these assessment tools, and there will be a brief introduction to the educational research on this topic. Finally, we will present our findings on practical issues in implementing such assignments at the course and department level.

RACHEL KINGSLEY

FRIDAY 9:45 – 10:45 AM ROOM S226
PRACTICAL USE AND BENEFITS OF ELLUMINATE, A NEW STATE-PAID ONLINE TOOL FOR MATH LEARNING AND VIRTUAL OFFICE

In today's fast pace world owing to work and other commitments, students are often not able to come to our offices to get help on difficult problems or assignments, or to go through concepts they struggle with from missed classes. Also, in general, most of the math courses are pretty rigorous in nature and their in-class review sessions tend to be fairly quick with

not much time for the instructors to spend time with individual students on a one-on-one basis. As a result, students often feel that they are being rushed into topics and concepts without them having enough time to go over them on their own at their own phase. In this regard, a new on-line teaching tool called Elluminate offers a great remedy solution to addressing the difficulties in students' learning. Elluminate supports not only live delivery with audio and video, but also offers session planning and recorded learning as well. This session will discuss the benefits of using Elluminate as a means to offer online help to students from the comfort of the instructors' and students' home. The session will also provide information on how to get the necessary training on Elluminate, and on how to get started on it easily through illustrations using my own recorded class sessions. In my own personal experience, I find Elluminate to be a wonderful resource for struggling students who need that extra help in math that they often expect from their math instructors. Also, importantly, Elluminate is available for use at no-cost to the instructors and colleges, since it is already fully paid for and supported by the Washington state government indigenously.

JEFF ELDRIDGE
FRIDAY 9:45 – 10:45 AM ROOM S230
(30 SEATS MAX)
FREE SOFTWARE TOOLS FOR THE MATH CLASSROOM
Several free (and almost free) computer programs that are useful in both traditional and online classroom environments will be demonstrated. The emphasis will be on relatively lightweight applications that are easy to install and use. Grab a computer in the lab and follow along!

MS. PEG BALACHOWSKI
FRIDAY 9:45 – 10:45 AM ROOM S233
PASS THE PROBLEM - A COLLABORATIVE LEARNING TECHNIQUE (COLT)
Educators who have been using collaborative learning techniques in their classroom claim that these techniques promote the active exchange of ideas. Within small groups students are able to achieve a much higher level of critical thinking. According to Johnson and Johnson (1986), there is persuasive evidence that cooperative teams achieve at higher levels of thought and retain information longer than students who work quietly as individuals.

JOYCE HAMMER
FRIDAY 9:45 – 10:45 AM ROOM S247
IMPROVING STUDENT PLACEMENT: TRANSCRIPTS AND ADVISORY NIGHTS FROM PROJECT TIME
Project TIME (Transitions in Math Education), funded by the Transition Mathematics Project and The Bill and Melinda Gates Foundation, has developed two activities that improve student placement: (1) developing a rubric for using high school transcripts as an alternative placement tool and (2) implementing a Parent/Student Advisory Night for grade 8-12 students. Participants will walk away with tools to implement either of these activities as well as other updates from Project TIME.

MR. PETE WILDMAN
FRIDAY 9:45 – 10:45 AM ROOM S248
USING NATIVE AMERICAN GAMES TO TEACH PROBABILITY CONCEPTS
The speaker has developed a number of classroom activities that can be used to teach probability concepts such as simulation, expected value and the law of large numbers. These activities are based on traditional Native American games and could be used in any liberal arts math or teacher preparation class. Come experience some of these activities! All participants will receive material to bring back to their classroom

YVES NIEVERGELT
FRIDAY 9:45 – 10:45 AM ROOM S249
DOCUMENTED APPLICATIONS FOR MATH UNDERGRADUATES II
Who needs this? Excluding purely imaginary applications, this session shows more applications that your students may already be doing, but documented by real names of real persons or real firms, with real addresses (or geographical areas, if deceased), who actually used the mathematics to produce real products. Following up on last year's request, this session include roots of polynomials, among other topics.

ERIC SCHULZ
FRIDAY 11:00 – NOON ROOM S226
QUICK-STARTING MATHEMATICA WITH PALETTES
Mathematica 7 is shipping with three new Assistant palettes (Basic Math Assistant, Classroom Assistant, Writing Assistant) which were created by the presenter after many years of experience using Mathematica. A brief story of how they came to be, how they can help you use and learn Mathematica, how they can help you and your students use Mathematica to learn and teach mathematics, and how with the palettes Mathematica can become your only writing and presentation tool will be the areas addressed in the presentation.

DR. WILLIAM MOORE
FRIDAY 11:00 – NOON ROOM S230
(30 SEATS MAX)
POLICY PERSPECTIVES ON MATH IN WASHINGTON STATE: ISSUES AND IMPLICATIONS FOR FACULTY
Helen Burn (Highline) and I would like to update folks on some of the current "big picture" politics of math in Washington State, both around K-12 and higher education issues: standards, placement testing, curricular approaches, private support for math efforts, etc.

DR. LYLE COCHRAN
FRIDAY 11:00 – NOON ROOM S233
MULTIVARIABLE CALCULUS ILLUSTRATED
In this session, the key ideas of multivariable calculus are brought to life with interactive animated demonstrations. Concepts to be illustrated include position vectors, limits, partial derivatives, gradient vectors, directional derivatives, and double integration.

SHARON CAMNER
FRIDAY 11:00 – NOON ROOM S247
DISCUSSION OF MATHEMATICS FOR EARLY CHILDHOOD EDUCATION
Note that this is not a presentation. It is an opportunity for discussion among those who are interested in mathematics courses for Early Childhood Education. A year ago, people at several schools began to teach such courses. Those at many other schools intended to start such courses, spurred by the state grant encouraging increased math and science preparation for ECE students. Let's talk about our progress with such courses, discuss what worked and what didn't work, share our course outcomes, suggest useful materials and books, etc.

JOHN PYKTEL AND LARRY RUSSEL
FRIDAY 11:00 – NOON ROOM S248
ENGAGING STUDENTS WITH RESPONSE SYSTEMS IN MATHEMATICS
This presentation will address the various ways to use technologies in a Mathematics class environment. Whether you're a seasoned user of this technology or unfamiliar with it, you will learn various techniques as we explore and discuss the changes in technology. In addition to what other instructors and students have to say about it. You'll come away with some of the do's and don'ts regarding the use of clickers, plus be introduced to some new interactive technologies which creates an even greater learning environment. If you want to improve attendance, peer discussions, grades for your students than you won't want to miss this engaging and thought provoking session.

MELONIE RASMUSSEN
FRIDAY 11:00 – NOON ROOM S249
HOW CAN WE SAVE STUDENTS MONEY?
Come discuss ideas with us on how to save students money. Ideas from Pierce College will be shared, including open text books, WAMAP (free online homework), custom placement tests, calculator rental program, and text book scholarships. Bring your ideas!

DR. GINGER WARFIELD
FRIDAY 2:00 – 2:30 ROOM S226
WASHINGTON'S MATH WARS FROM AN INSIDE PERSPECTIVE
Until three years ago, Washingtonians could look sympathetically but ever-so-slightly smugly at the states around the country where the Math Wars were playing hob with mathematics education. Since spring of 2006 the sympathy has increased, and the smugness has disappeared, as we have become the country's prime battleground. I am far from neutral, but will attempt to give a relatively balanced account of recent events and current status. I will welcome questions.

JOHN CARTER
FRIDAY 2:00 – 2:30 ROOM S230
(30 SEATS MAX)
WEB PAGES THAT WORK: USING WIKIS FOR COURSE WEBSITES
Over the last several years I have found course wikis to be a useful and intuitive means of communicating with my students. Student evaluations confirm that my students agree. In the course of this talk I will detail why I chose to set up a course wiki and how I have used course wikis to augment my math courses. I will also cover the basics of setting up a wiki. This talk is for anyone who wants a dynamic course website with minimal outlay of time and money.

DR. JANE WHITMIRE
FRIDAY 2:00 – 2:30 ROOM S233
FIVE CARD TRICK
It's time to make math pay. Start thinking Vegas. This card trick requires two people and an audience, but will baffle the most sophisticated minds. A variety of math topics are involved; counting cards, counting in base 4, permutations of three items, and cyclic operations. Nevertheless, it won't take any more than 30 minutes for the mind of a math teacher to master. Each participant receives a full written explanation.

MS. ELIZABETH O'NEIL
FRIDAY 2:00 – 2:30 ROOM S247
DO TAS MAKE A DIFFERENCE IN DEVELOPMENTAL MATH?
Olympic College began a pilot project using teaching assistants in about 1/3 of our developmental math sections in Fall, 2008. In this talk, we will address how the teaching assistants contribute to the classroom environment and the impact they have had on student outcomes. Anyone interested in developmental education, as well as demographics- and data-junkies, will find this talk particularly interesting.

MIKE KENYON
FRIDAY 2:00 – 2:30 ROOM S248
TEACHING SQUARES
Teaching Squares is a program that Green River Community College adapted in large part from a similar program at Clark College. Groups of four interdisciplinary faculty visit each other's classes and share ideas for effective teaching in their own classes. We'll discuss how this program works and how it might be adapted to serve similar purposes at other colleges.

EDWARD MILLER
FRIDAY 2:00 – 2:30 ROOM S249
THE JOY OF BASE 6, OR HOW TO SNEAK MORE MATHEMATICS INTO MATH CLASSES
It may seem obvious to the casual observer that we should choose examples to illustrate the point we are trying to get across in a clear and concise manner. How often do we (or the casual observer, for that matter) think about choosing examples that illustrate the point but can also be used to illuminate some other thing? How often do we think about the impact of the example on the next point in the lecture, the next topic in the

course, or even the next course in the sequence? How often does the casual observer think about choosing examples that support the outcomes of general education? These are heavy questions. With any luck the debate will turn Jerry Springer-esque and devolve to a level just short of chair throwing.

SUSAN KIDD
FRIDAY 2:45 – 3:15 ROOM S226
BUILDING TRANSITION PATHWAYS FOR ABE MATH STUDENTS

This will be a facilitated discussion on the opportunities and challenges for building transition pathways for Adult Basic Skills (both ABE and ESL) students into credit-bearing college math classes.

JAMES GRAY
FRIDAY 2:45 – 3:15 ROOM S230
(30 SEATS MAX)
WRITE TESTS FASTER

Learn to write exams and worksheets faster, more efficiently and with greater ease. Learn to use the useful Microsoft Word 2007 Equation Editor, especially how to setup shortcuts to suit your individual needs. General use of the program and shortcuts tailored to both developmental and college level classes will be discussed.

GAIL NORD
FRIDAY 2:45 – 3:15 ROOM S233
THE NINE POINT CIRCLE AND EULER’S LINE
Given a triangle ABC, we can find points related to the triangle that lie on a circle. Furthermore, some of these points are col-linear. Let us find how to generate them.

DAVID STRAAYER
FRIDAY 2:45 – 3:15 ROOM S247
TUTORQ - AUTOMATED QUEUE FOR DROP-IN TU-TORING CENTER

Note: Co-authored and (probably, pending funding) co-presented with the director of our Math Advising and Tutoring Center, Ms. Shannon Pressley Last year our math Department engaged a consultant, Bill Thomas, who came and observed math activities on campus and made a series of recommendations to us. He noted that in our drop-in tutoring center, some students complained that their requests for help were not always serviced in the right order. We designed and implemented a system using wireless keypads that not only displays a visible queue of requests, but it also helps categorize the requests, and keeps a detailed record of requests and wait times. This record-keeping has helped us to balance tutor staff, and to help document the service we provide to our students.

LAURA BRACKEN
FRIDAY 2:45 – 3:15 ROOM S248
PROBLEM OF THE DAY

Have you ever walked into class, started your lecture, and thought you were talking to a group of zombies? We’ll talk about using a “Problem of the Day” to get students engaged at the beginning in class and to possibly hopefully maybe rein-force or extend their knowledge of important concepts or skills.

SHARON WIEST
FRIDAY 2:45 – 3:15 ROOM S249
LOW-TECH PROJECT FOR LINEAR ALGEBRA AND RELATED EXAMPLES IN MULTIVARIABLE CALCULUS
Low-Tech meets high tech: How low tech projects can help increase a student’s understanding of the four major subspaces in linear algebra and the meaning of basis vectors. A calculus four example of what happens when a negative sign gets dropped is a second example of how to combine low tech learning strategies with the power of CAS.

ALICE KASEBERG
SATURDAY 9:00 – 10:00 ROOM S226
LESSONS FROM HOME BINGO GAME CARDS
BINGO cards can motivate expectation and probability as quantitative literacy topics or in a statistics course. Participants make observations about number distribution data from one set of home game cards, suggest characteristics of lucky cards and cards generating multiple winners, and leave with a page of probability questions and answers.

DR. HELEN BURN
SATURDAY 9:00 – 10:00 ROOM S230
(30 SEATS MAX)
THE STUDENT ACHIEVEMENT DATABASE: WHAT (USE) IS IT?

The SBCTC developed the Student Achievement Database as an alternative means of measuring student achievement based on the notions of momentum points and tipping points. This presentation focuses on research underlying the creation of the database, variables related to mathematics achievement, strengths and limitations of the database, and a framework for analyzing student achievement in mathematics conducted at Highline Community College using SPSS.

DR. HUGH SULLIVAN
SATURDAY 9:00 – 10:00 ROOM S233
AN INTRODUCTION TO FUZZY LOGIC
The presentation will briefly review Boolean Logic and introduce an extension to the “Logic of Lukasiewicz”. This Logic will establish a foundation for the concepts “Fuzzy Logic”. The basic “fuzzy” connectives and resulting tautologies will be validated and a comparison analysis of the three logics will be discussed.

DR. CHRIS BLACK
SATURDAY 9:00 – 10:00 ROOM S247
BEYOND ALGORITHM: PREPARING TEACHERS TO TEACH MATHEMATICS FOR UNDERSTANDING
Come explore the making of a secondary mathematics teacher! Central Washington University offers the last two years of the B.A. degree in Teaching Secondary Mathematics at the Lynnwood campus, accepting qualified students with a Direct Transfer Agreement from any Washington State Community College. In this session, I will discuss how this “2+2” program (two years at community college, two years at CWU) prepares students to become mathematics teachers by exploring the four mathematical process standards: Problem Solving, Reasoning, Communication, and Making Connections. This will be an interactive session.

NATHAN AUSTIN
SATURDAY 9:00 – 10:00 ROOM S248
DEVELOPING AND EXPLORING MATHEMATICAL CONCEPTS WITH THE CLASSPAD 330
How can CAS technology be utilized to separate the number-crunching from the concept? With an intuitive interface, convenient menus, and the ability to drag-and-drop, this tool has an easy learning curve and lots of power! Come and see how the ClassPad can streamline the process of investigating topics in Algebra, Precalculus, and Calculus.

JORDAN ENZOR
SATURDAY 9:00 – 10:00 ROOM S249
IMPROVING STUDENT PERFORMANCE WITH MASTERY BASED SOFTWARE
Discover the benefits of using interactive software in teaching and learning mathematics. Hawkes Learning Systems (HLS) promotes grade improvement and motivates students to succeed by engaging them in the learning process. Students learn more efficiently and effectively through tutorials, unlimited practice, mastery-based homework assignments, and error-specific feedback. HLS is the solution for your students’ success!

LINDA SCHMIDT
SATURDAY 10:15 – 11:15 ROOM S226
SUCCESS COMPARISONS FOR ONLINE, HYBRID, AND TRADITIONAL MATH 95/98 CLASSES
Analysis of standardized exit exams for online, hybrid, and traditional math 95/98 exams. Does it matter which type of class a student takes? Are there advantages or disadvantages of any of these?

ERIC ZIEGLER
SATURDAY 10:15 – 11:15 ROOM S230
(30 SEATS MAX)
BEST PRACTICES FOR USING WEBASSIGN ONLINE HOMEWORK
This section will include a brief overview of the WebAssign homework system, the integration of Cengage Learning content, and incorporate the suggestions of faculty currently using WebAssign to deliver a top-notch learning experience for their students.

JESSICA REIDEL
SATURDAY 10:15 – 11:15 ROOM S233
THE MATHEMATICAL WORLD OF JUGGLING
The juggling world is filled with mathematicians and they have combined their two loves in many ways. We will explore the notations and personalities that create the intersection of these two arts.

JERRY JOHNSON
SATURDAY 10:15 – 11:15 ROOM S247
ENHANCING STUDENT LEARNING VIA THE HISTORY OF MATHEMATICS
We can make the learning of mathematics more exciting and “human” if we integrate elements from the history of mathematics, which is filled with challenging problems, unusual people, and great opportunities to make connections. In addition to exploring specific examples, this session will discuss integration approaches that are both adaptable and manageable.

LARRY RUSSELL
SATURDAY 10:15 – 11:15 ROOM S248
LEARN HOW TO SOLVE THE RUBIK’S CUBE!
During this session we will discuss some of the history involving the Rubik’s Cube. We will also learn some math that is involved, including the calculation for the total number of separate positions possible with the Rubik’s cube as well as some algorithms associated with it to solve it. Apart from that we will learn how to solve it. Finally, we will learn some easy patterns to create with the cube.

DAVID LIPPMAN
SATURDAY 10:15 – 11:15 ROOM S249
WIIMOTES AND ROBOTS
It seems so many of the applications we teach are unrealistic or conceptual. Physical computing (interfacing sensors with software) provides a way to engage students in a fun, practical, and tactile way. Examples will be shown using the Wii remote to apply trig and linear algebra, using a programmable micro-processor to apply trig and algebra, and more.

PARTICIPANTS

Bellevue Community College

Andria Villines
 Dale Hoffman
 Martha Stevens
 Jennifer Laveglia
 Jennifer Laveglia
 Haji Nazarian
 Lynne Sage
 Simrat Ghuman
 SUN-MI KU
 Yen Flanagan
 Larry Curnutt
 Caroline Shook
 Joyce Lee
 Mausumi Maulik
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Big Bend Community College

Donna Brown
 Stephen Lane
 April Mayer
 Barbara Whitney
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WASHINGTON STATE COMMUNITY COLLEGE MATH CONFERENCE

EXHIBITORS

EXHIBITORS ARE LOCATED IN THE S-BUILDING COURTYARD.
EXHIBIT HOURS ARE FRIDAY 8:00AM TO 4:30PM AND
SATURDAY 8:30AM TO 12 NOON.

The Washington State Community College Math Conference Committee extends our thanks to all of the exhibitors who attended our conference this year.

CASIO AMERICA INC.

Nathan Austin, Greg Williams

CENGAGE LEARNING

Eric Ziegler, Josh Fletcher, Brittney Bent

EINSTRUCTION CORPORATION

John Pyktel

HAWKES LEARNING SYSTEMS

Jordan Enzor

MCGRAW-HILL HIGHER EDUCATION

Peggy Lucas

PEARSON HIGHER EDUCATION

Teri Orr, Dwayne Coy, Mellissa Yokell

W. H. FREEMAN

William Davis, Michael Howard

WASHINGTON STATE COMMUNITY COLLEGE MATH CONFERENCE

SPECIAL THANKS

The Washington State Community College Math Conference Committee and faculty and staff of Columbia Basin College would like to thank:

ATOMIC SCREENPRINT

BASKIN ROBBINS

CANDLE CONNECTION

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PEARSON

PRESTON WINERY

RED BARON GIFT HAUS

RED LION HOTEL AND CONFERENCE

CENTER

SLEEPING DOG WINERY

STARBUCKS

SWEET TREAT

TEXAS INSTRUMENTS

THE HAT SHOP/WOOD SHOP

TITLE V

VILLAGE ALPS

W. H. FREEMAN

WILEY

for contributions toward the hosted social events and door prizes,
and for making this year's conference such a success!

S226	S230	S233	S247	S248	S249
"I FRIDAY 8:30 - 9:30"					
CRYSTAL RAVENWOOD Whatcom Community College Reflective Teaching Using the Critical Incident Questionnaire	DR. PATRICK GARDNER Columbia Basin College Linear Algebra Applications Useful in an Introductory Course	BIRGIT HINDMAN Lake Washington Technical College Seeing the light - Lighting calculation in computer graphics	DR. MEG BARTRAND Columbia Basin College Fun and Games, Song and Dance, Projects and Presentations to Spark Interest in and Solidify Learning for Mathematics Students	DAVID NELSON WAMATYC/Green River Community College Clients in the Classroom	GREG HARBAUGH AND TOPHE ANDERSON Seattle Central Community College/EVCC Reading Assignments for Math: Using Preparatory Assignments To Promote Student Engagement
"II FRIDAY 9:45 - 10:45"					
RACHEL KINGSLEY Everett Community College Practical use and benefits of Elluminate, a new state-paid online tool for math learning and Virtual Office	JEFF ELDRIDGE Edmonds Community College Free Software Tools for the Math Classroom	PEG BALACHOWSKI Everett Community College Pass the Problem - A Collaborative Learning Technique (CoLT)	JOYCE HAMMER Green River Community College Improving Student Placement: Transcripts and Advisory Nights from Project TIME	PETE WILDMAN Spokane Falls Community College Using Native American Games to teach probability concepts	YVES NIEVERGELT Eastern Washington University Documented Applications for Math Undergraduates II
"III FRIDAY 11:00 - NOON"					
ERIC SCHULZ Walla Walla Community College Quick-Starting Mathematica with Palettes	DR. WILLIAM MOORE WA St Bd for Comm & Tech Colleges Policy Perspectives on Math in Washington State: Issues and Implications for Faculty	DR. LYLE COCHRAN Whitworth University Multivariable Calculus Illustrated	SHARON CAMNER Pierce College Discussion of Mathematics for Early Childhood Education	JOHN PYKTEL AND LARRY RUSSEL eInstruction Corporation and CBC Engaging Students with Response Systems in Mathematics	MELONIE RASMUSSEN Pierce College How can we save students money?
LUNCH BREAK					
"IV FRIDAY 2:00 - 2:30"					
DR. GINGER WARFIELD University of Washington Washington's Math Wars from an Inside Perspective	JOHN CARTER Franklin and Marshall College Web Pages that Work: Using Wikis for Course Websites	DR. JANE WHITMIRE Central Washington Univ. Five Card Trick	ELIZABETH O'NEIL Olympic College Do TAs Make a Difference in Developmental Math?	MIKE KENYON Green River Community College Teaching Squares	EDWARD MILLER Lewis-Clark State College The Joy of Base 6, or How To Sneak More Mathematics Into Math Classes

S226	S230	S233	S247	S248	S249
"V FRIDAY 2:45 - 3:15"					
SUSAN KIDD WA St Bd for Comm & Tech Colleges Building Transition Pathways for ABE Math Students	JAMES GRAY Tacoma Community College Write Tests Faster	GAIL NORD gailnord@yahoo.com The Nine Point Circle and Euler's Line	DAVID STRAAYER Tacoma Community College TutorQ - automated queue for drop-in tutoring center	LAURA BRACKEN Lewis-Clark State College Problem of the Day	SHARON WIEST Wenatchee Valley College Low-tech project for linear algebra and related examples in multivariable calculus
"FRIDAY 3:30 - 4:00"					
	Discussion Groups	Discussion Groups	Discussion Groups	Discussion Groups	WAMATYC Meeting
"VI SATURDAY 9:00 - 10:00"					
ALICE KASEBERG Retired Lane CC in Oregon Lessons from Home BINGO Game Cards	DR. HELEN BURN Highline Community College The Student Achievement Database: What (use) is it?	DR. HUGH SULLIVAN Eastern Washington U. An Introduction to Fuzzy Logic	DR. CHRIS BLACK Central Washington University, Lynnwood Center Beyond Algorithm: Preparing Teachers to Teach Mathematics for Understanding	NATHAN AUSTIN CASIO AMERICA INC. Developing and Exploring Mathematical Concepts with the ClassPad 330	JORDAN ENZOR Hawkes Learning Systems Improving Student Performance With Mastery Based Software
"VII SATURDAY 10:15 - 11:15"					
LINDA SCHMIDT Heritage University Success Comparisons for Online, Hybrid, and Traditional Math 95/98 Classes (30 Minute Presentation)	ERIC ZIEGLER Cengage Learning Best Practices for using WebAssign Online Homework	JESSICA REIDEL Whatcom Community College The Mathematical World of Juggling	JERRY JOHNSON Western Washington University Enhancing Student Learning Via the History of Mathematics	LARRY RUSSELL Columbia Basin College Learn How to Solve the Rubik's Cube!	DAVID LIPPMAN Pierce College Ft Steilacoom Wiimotes and Robots
"SATURDAY 11:15 - NOON"					
	Discussion Groups	Discussion Groups	Meeting with next year's conference hosts.	Discussion Groups	Discussion Groups
LUNCH BREAK					

HOSTED BY THE MATHEMATICS FACULTY AND STAFF OF
COLUMBIA BASIN COLLEGE

Columbia Basin College complies with the spirit and letter of state and federal laws, regulations and executive orders pertaining to civil rights, equal opportunity and affirmative action. CBC does not discriminate on the basis of sex, race, color, national origin, religion, age, marital status, physical, mental or sensory disability, sexual orientation or Vietnam veteran status in its educational programs or employment. Questions may be referred to Camilla Glatt, Vice President for Human Resources & Legal Affairs, (509) 542-5548. Individuals with disabilities are encouraged to participate in all college sponsored events and programs. If you have a disability and require an accommodation, please contact the CBC Resource Center, (509) 542-4412, or TTY/TDD at (509) 546-0400. This notice is available in alternative media by request.



Last Minute Announcements

Saturday Lunch Location:

Lunch on Saturday, featuring keynote speaker Dr. Nihar Jindal has been moved to room L102. Enter the doors on the North side of the L-Building.

Bonus Saturday Lecture:

DR. EDWARD BURGER

Saturday 2:00 – 4:00pm, in the CBC Theatre (P-Building)

Is There A Fourth Dimension? Can You See It?

This talk is free and open to everyone of all ages and (mathematical) abilities. Join us for entertaining stories, hands on experiments, and even a bit of art appreciation. If you hate mathematics, this lecture is for you. If the sight of an equation makes you ill, this talk is for you. If you never thought you'd ever go to a math lecture, this lively presentation is for you!

Additional Conference Presentations:

BART STEWART and MANJU JINDAL

Friday 3:30 – 4:00pm, Room S230

MyMath Lab

Applications of MyMath Lab software in the classroom.

LARA MICHAELS

Saturday 11:15 – Noon, Room S233

Teaching “New Generation” Students

Have you noticed that the new generation is a bit different? This talk will discuss some of the characteristics of this newest generation sometimes called “Millennials,” the “Net Generation” or “Indigos.” We’ll talk about how, as faculty, changing our view of our role in teaching and our approach to it (such as using more online media) might better meet the needs and expectations of this population.

Organization Meetings:

WAMATYC Member Meeting

Friday 3:30 – 4:00pm, Room S249

WAMAP.org Meeting

Saturday 11:15 – Noon, Room S226

Next Year's Conference:

Next year's conference will be hosted by Yakima Valley Community College and will be held May 20-22, 2010 in Yakima.

Conference History

The first Washington State Community Mathematics Conference was held in 1969. Organized by Phil Heft, Jim Relf, Larry Larson, and John Van Duff, it was held at "The Lodge" at Ashford where accommodations required sleeping bags. Legend has it that 33 people attended the first conference, at a cost of \$16.68 per person, but the menu for the first banquet and the name of the first guest speaker remain unsolved mysteries. There are usually a few invited talks, but the bulk of the program is contributed by inspired volunteers. Responsibility for conference planning is passed among the 34 Washington Community Colleges, with no rule for who hosts when; nor where the meetings are held. As if by magic, volunteers appear and destination meeting sites are found in the Cascade Mountain corridor, on the Olympic Peninsula, or in the Columbian Gorge. A traveling fund helps the host institution with start-up costs. This year there are over 200 registered participants!

Year	Conference Host Schools	Location of Conference
1969	Green River/Highline/Ft. Steilacoom	The Lodge
1970	Spokane Falls	The Lodge
1971	Everett	Snoqualmie Pass
1972	Everett	Snoqualmie Pass
1973	Seattle Central	Snoqualmie Pass
1974	Green River	Lake Wilderness
1975	Highline	Providence Heights
1976	Bellevue	Snoqualmie Pass
1977	Shoreline	Providence Heights
1978	Edmonds	Providence Heights
1979	Olympic	Port Ludlow
1980	Spokane Falls	Sun Mountain
1981	Spokane Falls	Sun Mountain
1982	Highline	Lake Chelan
1983	Olympic	Port Ludlow
1984	Green River	Alderbrook
1985	Shoreline	Sun Mountain
1986	North Seattle	Alderbrook
1987	Lower Columbia	Alderbrook
1988	Olympic	Port Ludlow
1989	Bellevue	Lake Chelan
1990	Clark	Alderbrook
1991	Pierce & Tacoma	Lake Chelan
1992	Yakima	Yakima
1993	Highline	Wenatchee
1994	South Seattle	Silverdale
1995	Skagit Valley & Whatcom	Wenatchee
1996	Spokane Falls & ORMATYC	Skamania Lodge
1997	Green River	Lake Chelan
1998	Tacoma & Big Bend	Lake Chelan
1999	Edmonds	Ocean Shores
2000	Bellevue	Wenatchee
2001	Peninsula & ORMATYC	Skamania Lodge
2002	Clark	Yakima
2003	Spokane & North Idaho	Wenatchee
2004	Pierce	Yakima
2005	Highline	Ocean Shores
2006	Olympic & ORMATYC	Skamania Lodge
2007	Wenatchee Valley	Wenatchee
2008	North Seattle	Chelan
2009	Columbia Basin	Pasco
2010	Yakima Valley	Yakima
2011	(unassigned) & ORMATYC	

1. A box that is 4 ft. by 4 ft. by 4 ft. is packed with cans that are 2 ft. high and have a diameter of 6 in. What is the maximum number of cans that can fit in the box? (no warping the cans, etc)
2. A dartboard has 2 regions for earning points: 5 points and 7 points. What is the largest impossible score? (integers only).
3. Where on the surface of the earth can you go south 100 miles, east 100 miles, and then north 100 miles and end up in your starting point? One such place is the North Pole! Find another point on the earth's surface.
4. "No," said the mathematician to his 14-year old son, "I do not feel inclined to increase your allowance this week by 10 dollars. But if you'll take a risk, I'll make you a sporting proposition." The boy groaned. "What is it this time, Dad?" "I happen to have," said his father, "10 crisp new 10-dollar bills and 10 crisp new one-dollar bills. You may divide them any way you please into two sets. We'll put one set into hat A, the other set into hat B. Then I will blindfold your mom and I'll mix the contents of each hat and you're mother will randomly pick a hat and draw out one of the bills. If it is a \$10 you get to keep it, if she draws out a \$1 bill you will have to mow the grass for free for one month. The boy agreed. How should he divide the 20 bills between the two hats to maximize the probability of his mother drawing a \$10 bill and what will that probability be?
5. A candle is lit at 5:30 p.m. Another candle, 1 cm shorter than the 1st is lit at 7:00 p. m. The candles are the same length at 9:30 p.m. The 1st candle burns out at 11:30 p.m. and the 2nd one at 11:00 p. m. How tall was the longer candle?

6. Evaluate $3 + \frac{1}{4 + \frac{1}{3 + \frac{1}{4 + \dots}}}$

Where the dots indicate the pattern continues without end.

7. Square $ABCD$ has side length s , a circle centered at E has radius r , and r and s are both rational. The circle passes through D , and D lies on BE . Point F lies on the circle, on the same side of BE as A . Segment AF is tangent to the circle, and $AF = \sqrt{9 + 5\sqrt{2}}$. What is r/s ?

8. Let $ABCD$ be a trapezoid with $AB \parallel CD$, $AB = 11$, $BC = 5$, $CD = 19$, and $DA = 7$. Bisectors of $\angle A$ and $\angle D$ meet at P , and bisectors of $\angle B$ and $\angle C$ meet at Q . What is the area of hexagon $ABQCDP$?
9. Square $AIME$ has side lengths of 10 units. Isosceles triangle GEM has base EM , and the area common to triangle GEM and square $AIME$ is 80 square units. Find the length of the altitude to EM in triangle GEM .
10. Shuffle an ordinary deck of 52 cards containing 4 aces. Then turn up cards from the top until the first ace appears. On average, how many cards are produced to produce the first ace?

Answers

1. _____

2. _____

3. ~~ent 15/11~~ _____

4. _____

5. 9 cm

6. ~~ent 15/11~~ $\frac{3 + \sqrt{2}}{2}$

7. _____

8. _____

9. _____

10. _____