



# THE MATH LOCUS

Published periodically by the Mathematics Department at  
Kirtland Community College, Roscommon, Mich.  
<http://kirtland.edu/themathlocus>

## About us

The Tutoring and Student Success Center, under the leadership of Kate Jakobson, is a great example of Learn and Serve at Kirtland Community College. Here you can find many of all ages who mentor, help and tutor. Genevieve Warren has taught at Kirtland for 26 years and is now tutoring, especially English as a Second Language. Caryn Schutte is the Lead English Tutor and Helen Scheer is the Lead Mathematics Tutor. Phil Collins also tutors math.

Wendy Hall, a student helper for Kate, is planning to graduate this spring as an administrative assistant. Students who tutor math include Terry Barioni, Bill Berlin, David Callahan, Ronda Caverly, Ben Chouinard, Whitney David, Tom Fautin, Barb Morey, Paul Owen (M-TEC), Scott Sullivan and Ryan Zbikowski.

Other student tutors are Catherine Lademan, Elizabeth Godin and Melinda Boudiette.

See *STAFF*, page 2

## Kirtland at its best

This issue of *The Math Locus* attempts to show Kirtland Community College at its best using positive examples, such as Service Learning, dedicated instructors, community involvement and helping each other on campus. Math Dialog Days and TLC (Teaching and Learning Colloquium) examine best practices in teaching and learning. KCC attempts to have a collective vision of what we do well.

The following could have happened here: At a commencement ceremony at Wayne State University, the speaker spoke to a group of

graduating Certified Physician Assistants. His opening words were, "Well, now you have made it! Now it is your turn to give back to the community." His words were not empty. He was not only one of their instructors, he also volunteered at a clinic in a poor area in Detroit.

At Kirtland, we not only want our graduates to earn a paycheck, but to be of service to their communities. We want more bold ideas, a preferred future and our dreams made inevitable.



## Loving every digit of it

*Instructors in the Kirtland Community College Mathematics Department include (front, l-r) Helen Scheer, Marcell Romancky, Erinne Baughn, Jane Lange, (middle) Sondra Doran, Dan Korman, (back) Ron Mulka, Nick Holton, Bob Rickard, Doug Mace, Kevin Baughn and Jerry Neigh.*

*Take the time to read the two articles about these fine mathematicians (full-time and adjunct) and see that they are full of life, and love what they do.*

## Service Learning – it's in there

For the past seven years, Marcell Romancky has incorporated a Service Learning component into her Mathematics for Elementary Teachers I course. Each student who takes the course

works in a local elementary classroom for 16 hours using the manipulatives that are discussed in the course, leading to a much better understanding of the usefulness of those manipulatives. The project is

connected to all of the local elementary schools in the KCC district and allows students to work in schools close to home.

The instructors of Finite  
See *SERVICE*, Page 5

# KCC math teachers turn out to be complex numbers!

Here's the story on who they are:

## Full-Time Mathematics Instructors

### **MARCELL ROMANCKY**

I at one time sat in a seat at Kirtland Community College as a student. This was my first taste of Kirtland and it must have felt right, because I have not left, outside of when I was working on my bachelor's and master's degrees from Central Michigan University. My reason for becoming a teacher had to do with my high school history teacher who recognized my teaching ability. He encouraged me to become a teacher, which I have never regretted. While at college, I discovered math to be a favorite subject and teaching math to be something I enjoy! In addition to teaching, I spend a lot of time

taking care of my log house, gardening, making wine and traveling. (*Marcell is chairwoman of the Mathematics Department at KCC.*)

### **NICK HOLTON**

Mathematics is AWESOME! Many times a problem can be solved in two or three ways – all of them yielding the same (correct) answer. This has always amazed me. Mathematics is a logical structure of techniques used to recognize patterns and solve problems. I knew very early that I wanted to teach and mathematics became the clear choice for my career. Since I started teaching, in 1980, I have also taught history and American government, but it's mathematics that holds my interest. I taught high school math for 16 years and have been at Kirtland since 1996.

In the last 10 years I have been involved in the Service Learning movement. Integrating community service into courses is a great way to provide students with relevant experiential learning. Outside of KCC, I like to hunt, fish, camp and ride my motorcycle. (*Nick is the coordinator of Service Learning at KCC. He also coordinates Kirtland's Teaching and Learning Colloquium.*)

### **DOUG MACE**

I have been teaching at the college level in some capacity since I was 21. Since January 2000, I have been with Kirtland. Prior to that I taught at Baker College in Flint. Teaching is the family business – both of my parents are retired public school teachers and my brother and sister also have master's degrees in their

respective fields. During the summer, my family likes to take long vacations, traveling in the West and Europe. One of the biggest joys I have as a faculty member is helping students choose and enter universities and celebrating with them as they reach and exceed their goals.

### **KEVIN BAUGHN**

I am not your typical mathematics instructor. I attended Wright State University in Dayton, Ohio, after graduating high school. I soon found that the "big university" was not for me ... maybe it was too many parties. So I transferred to Sinclair Community College in Dayton and graduated with an associate's degree in mechanical engineering technology. While at SCC, I acquired an

**See TEACHERS, page 6**

## Math Dialog Days:

*An exchange of ideas that really adds up*

The Mathematics Department at Kirtland sponsors this colloquy on mathematics to provide anyone who deals with math education the opportunity to discuss the three Ps of mathematics – philosophy, pedagogy and principles. It is important that we take some time to hone our collective thoughts on math education.

The dialog sessions are two to three hours long and convene once a semester, with the meeting location rotating between math instructors' houses where great food, good fellowship and meaningful discussion are enjoyed.

Past topics include calcu-

lator use, international math research studies, student learning styles and math curricular issues.

Following a meal, we relax and review readings on the day's topic. These readings are designed to stimulate a meaningful exchange of ideas between participants.

This gathering is not intended to solve the major unsolved problems in mathematics. Nor do we intend that this group produce more work for any of the participants. Rather, the hope is that through dialogue we not only understand what others believe, but we also clarify the tenets of our own beliefs.

A spinoff from the Math Dialog Days is Kirtland's TLC (Teaching and Learning Colloquium). Steering committee members for this activity are Nick Holton, Anne Hauser, Nancy Pavelek, John Thiel and Helen Scheer. Small groups of the KCC faculty meet once a month for TLC and engage in meaningful dialogue on current issues in education and examine best practices in teaching and learning. Classroom management was discussed during the February meeting and the meeting of March 12 and 13 focused on student learning styles. Bob Rickard and Kate Jakobson facilitated.

## Staff

*Continued from page 1*

Heidi Sura and Linda Sherwood man the Writing Center in INS 17. Heidi is a part-time English instructor and Writing Center Writing Specialist.

People who like and appreciate math and tutoring are very diverse and appreciate many things, just like you. Don't believe it?! Read the article above about KCC math instructors and find out.

## Classifieds

**TUTORS AND TUTEES** are needed for mathematics. Apply at the Kirtland Tutoring Center (INS 20).

# PUZZLES TO PONDER

## HOW TO SOLVE THIS PUZZLE

This type of number fill-in puzzle has become widely popular in the last five years. If you haven't tried it yet, you're in for a treat! Here's how: When you are done with the puzzle, each of the nine boxes that make up the puzzle – each of which contain

nine squares – should be filled with the digits 1 through 9. In addition, all of the nine horizontal rows and nine vertical columns – each of which contain nine squares – should contain the digits 1 through 9. No duplicates or missing digits are allowed, in either the boxes, rows, or columns.

Good luck!

7		6		1		5		2	
	1				3			4	
				9		8			
9						3		1	
		5			9	1			6
1		2						3	
6		4		3		9		7	
	2					4		8	
3					8	2			1

Decimal	Hexadecimal	Octal	Binary
0 <sub>dec</sub>	0 <sub>hex</sub>	0 <sub>oct</sub>	0 0 0 0
1 <sub>dec</sub>	1 <sub>hex</sub>	1 <sub>oct</sub>	0 0 0 1
2 <sub>dec</sub>	2 <sub>hex</sub>	2 <sub>oct</sub>	0 0 1 0
3 <sub>dec</sub>	3 <sub>hex</sub>	3 <sub>oct</sub>	0 0 1 1
4 <sub>dec</sub>	4 <sub>hex</sub>	4 <sub>oct</sub>	0 1 0 0
5 <sub>dec</sub>	5 <sub>hex</sub>	5 <sub>oct</sub>	0 1 0 1
6 <sub>dec</sub>	6 <sub>hex</sub>	6 <sub>oct</sub>	0 1 1 0
7 <sub>dec</sub>	7 <sub>hex</sub>	7 <sub>oct</sub>	0 1 1 1
8 <sub>dec</sub>	8 <sub>hex</sub>	10 <sub>oct</sub>	1 0 0 0
9 <sub>dec</sub>	9 <sub>hex</sub>	11 <sub>oct</sub>	1 0 0 1
10 <sub>dec</sub>	A <sub>hex</sub>	12 <sub>oct</sub>	1 0 1 0
11 <sub>dec</sub>	B <sub>hex</sub>	13 <sub>oct</sub>	1 0 1 1
12 <sub>dec</sub>	C <sub>hex</sub>	14 <sub>oct</sub>	1 1 0 0
13 <sub>dec</sub>	D <sub>hex</sub>	15 <sub>oct</sub>	1 1 0 1
14 <sub>dec</sub>	E <sub>hex</sub>	16 <sub>oct</sub>	1 1 1 0
15 <sub>dec</sub>	F <sub>hex</sub>	17 <sub>oct</sub>	1 1 1 1

**O.K. – Given the systems of numbers above, determine the match-ups for the decimal numbers below:**

Decimal numbers: 23 17 16 75 18 24 12 11

Match to:

\_\_\_ C<sub>hex</sub>; \_\_\_ 12<sub>hex</sub>; \_\_\_ F8<sub>hex</sub>; \_\_\_ 21<sub>oct</sub>;

\_\_\_ 10000<sub>bin</sub>; \_\_\_ 1011<sub>bin</sub>; \_\_\_ 30<sub>oct</sub>; \_\_\_ 4B<sub>hex</sub>

**Figure out the letter equivalents for the numbers 0-9 using the divisions offered and come up with the answers to these two puzzles!!**

Puzzle 1.

0 1 2 3 4 5 6 7 8 9

Key: H + U = S

				I	H	K	T	
T	I	E	B	U	C	K	E	T
			T	I	E			
			I	B	C	K		
			I	G	H	E		
			H	T	K	E		
			H	G	K	E		
			G	E	E	T		
			I	U	T	E		
			H	U	T			

Puzzle 2.

0 1 2 3 4 5 6 7 8 9

Key: A<sup>3</sup> = I

				T	S	T	X
H	E	S	H	A	P	E	
		R	C				
		H	H	A			
		H	C	E			
				S	P		
				R	C		
				H	P	E	
				H	P	E	

# SOLUTIONS + TIME

7	9	6	1	4	5	3	2	8
2	1	8	7	3	6	4	9	5
4	5	3	9	2	8	1	6	7
9	6	7	2	5	3	8	1	4
8	3	5	4	9	1	2	7	6
1	4	2	8	6	7	5	3	9
6	8	4	3	1	9	7	5	2
5	2	1	6	7	4	9	8	3
3	7	9	5	8	2	6	4	1

### Decimal number match-ups:

$$12 = C_{\text{hex}}; 18 = 12_{\text{hex}}; 23 = F8_{\text{hex}}; 17 = 21_{\text{oct}};$$

$$16 = 10000_{\text{bin}}; 11 = 1011_{\text{bin}}; 24 = 30_{\text{oct}}; 75 = 4B_{\text{hex}}$$

### Division Puzzles

Solution 1. 
$$\begin{array}{r} \text{E I G H T B U C K S} \\ 0 \ 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 9 \end{array}$$

Solution 2. 
$$\begin{array}{r} \text{C H A P T E R S I X} \\ 0 \ 1 \ 2 \ 3 \ 4 \ 5 \ 6 \ 7 \ 8 \ 9 \end{array}$$

## The Math Locus Calendar

# March and April, 2008

Think Spring!!!

Listen to the birds.

Enjoy **MATH**.

Helpers include  
Melinda Boudiette  
Elizabeth Godin  
Catherine Lademan  
Wendy Hall

				The second prime number times 9	Number of days in February. (no leap)	<b>XXIX</b> in Roman Numerals
$\log 5 + \log 6 = \log (?)$	Five less than the square of six	$\sin^2 X = \cos^2 X$	8 plus a negative 6	<b>T11 in binary</b>	<b>100 in binary</b>	$x^2 - 25 = 0$ where $(x > 0)$
The third positive even integer.	Three pins short of a spare.	Two cubed.	Square root of 81	The sum of the first four consecutive positive integers	Baker's dozen minus two	The sixth prime number minus one.
Prime number before 17	<b>Pi Day</b> <b>Pi = 3.14</b> (approximately)	<b>E</b> in hexadecimal	<b>10</b> in hexadecimal	If $g(x) = 2$ and $f(x) = x + 15$ . Then $f(g(x)) = ?$	Three squared times two	$ 7 + (-12) $
The sum of the first four consecutive even positive integers	9:00 p.m. is ?:00 in international time?	<b>XXII</b> in Roman Numerals	$(X-5)(X+5) = X^2 - ?$ . Then minus two.	In Binary: 11000	The sum of the first five consecutive odd positive integers	$T(X+2)(X+13) = X^2 + 15X + ?$

# LOCUS OF LEARNING

## Scheer commitment

*Tutor takes home  
KCC Service-  
Learning award*

Nicholas Holton, Kirtland's Service Learning coordinator, nominated **Helen Scheer**, part-time mathematics instructor and lead math tutor for Kirtland's Tutoring Center, for the Michigan Campus Compact's Faculty/Staff Community Service-Learning Award.

Holton said of Scheer that "as an adjunct math instructor, (Helen) knows how much students struggle with math. She initiated the math newsletter, *The Math Locus*, to demystify mathematics in a way that made it accessible to all. Scheer received the award on Feb. 6, at CMU.

Tutoring services at KCC are free to all students. More than 400 students per year take advantage of the services, with some students raising their grades by an average of 1.5 letter grades.

About 2,300 students attend a variety of certificate and two-year degree programs at Kirtland's two campuses – at Roscommon and the Michigan Technical Education Center in Gaylord – with the college's service area including all or parts of Crawford, Oscoda, Ogemaw, Roscommon, Otsego, Kalkaska, Missaukee, Gladwin and Alcona counties.

## Catastrophe

### KCC offers help to everyday survivors

It is a common cliché that we only see the tip of the iceberg in many everyday situations. So it is with **LEARN AND SERVE** at Kirtland. We could cite many individuals in various departments at KCC who serve their communities. But since **THE MATH LOCUS** favors mathematics, we have featured the Math Department in this issue. However we do notice those who help organizations like **RIVERHOUSE**.

The mission of Riverhouse is to provide safety and empowerment to survivors of domestic and sexual violence and the homeless. Riverhouse, Inc., has a board of directors which includes its president, Nancy Pavelek, who is a nursing instructor at Kirtland Community College, and vice president, John Thiel, a history instructor at KCC. This year, proceeds from the annual Kirtland Faculty Christmas Party and White Elephant Auction, which totalled \$1,300, were donated to Riverhouse.

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Our Little College in the Woods has been hit



## Service

*Continued from page 1*  
Math – Nick Holton, Karen Dillion, Jane Lange and Marcell Romancky – include a Service Learning Lab in the class. Nick also used Service Learning projects when he taught Statistics. When Sarah Long and Emily Bellairs took Calculus, they performed

Honors Option Service Learning projects. Long's project involved analyzing the output levels from a non-profit radio station in her hometown. Her work showed that the station didn't need to spend scarce resources to purchase new equipment. Rather, the station could adjust output

hard by a cold winter. But we come upon an anniversary of a tragedy of winter. Lest we forget, there are still a few survivors alive who

lived through this event.

### Iceberg + Titanic = Disaster

The Titanic was a British-registered, four-funneled, ocean liner built for the transatlantic passenger and mail service between Southampton, England, and

New York. At the time of her maiden voyage, she was the largest vessel afloat. On **April 10, 1912**, the Titanic set sail with 2,200 passengers and crew. Four days later the Titanic collided with an iceberg and sank. Approximately 1,520 people died and 700 survived. (*Check the Internet for more details.*)

The Math Tutoring room has some marvelous posters by the Isaac Newton Institute, which exists to promote mathematics. Check the site [www.newton.cam.ac.uk](http://www.newton.cam.ac.uk). One of the posters is entitled "Catastrophe Theory." The tip of the iceberg is shaped by the Catastrophe Theory. Eighty percent of the floating iceberg is hidden below the ocean surface. As this part melts, the iceberg can become unstable and topples sideways and the process starts all over again. The height of the iceberg could be given as:  $Z = Y^3 - X Y$ .

during peak times to solve its technical issues. Bellairs studied infant mortality rates in the state. Her results, shared as a poster session on campus, showed how infant mortality rates for African Americans are much higher than Caucasians and even higher than for other minorities.

# Teachers

## *Continued from page 2*

interest in mathematics. My physics instructor did a problem that took up eight large chalk boards to get an estimate and then told us it would take three lines to get an exact answer if we knew calculus. I returned to WSU part time and earned a bachelor's degree in psychology, then a master's degree in education as a classroom mathematics teacher – 17 years after graduating from high school. I taught high school mathematics for six years prior to coming to KCC. This is my fifth year at Kirtland.

### **JANE LANGE**

This is my 10th year at KCC. I started teaching part time in the Mathematics Department and now teach full time in the Mathematics and Business departments. After graduating from Ferris State College in 1981, my husband and I moved around a bit. We lived in Huntington, W.Va., for two years and one year in Cedar Rapids, Iowa. We were called back to Grayling with baby in tow, to run our own Dawn Donuts franchise. We closed our doors in 1996 and I decided to substitute teach in our school district. That's when I found my calling, so to speak. I went back to school and received my MBA in 2000. My daughters keep me busy. Kelly is a freshman at MSU and Katie is a freshman at Grayling High School. I enjoy playing golf, gardening, traveling, reading and, of course, shopping.

### *Adjunct Mathematics Instructors*

### **ERINNE BAUGHN**

I graduated from the University of Dayton in 1988 with a bachelor's degree in secondary education, with teaching fields of math and history. In Ohio, I taught for nine years at the high school level. This is my fifth

semester at KCC. I have two children who keep me very busy. My son, Bill, is a math tutor at Kirtland. I also work at Pinnacle Rehabilitation in West Branch where I teach aqua aerobics and monitor aquatic therapy programs. I enjoy reading, making handmade cards, cooking and shopping.

### **SONDRA DORAN**

Sondra taught at KCC for more than five years, then took some time off. KCC is pleased to have her back teaching in the Mathematics Department. She does volunteer work for the community, enjoys singing in the church choir at St. Michael's and plays the piano for relaxation.

### **DAN KORMAN**

Dan teaches online algebra classes. He and his wife grow a large assortment of lilies and sell them online. They have two sons who are active in the Boy Scouts.

### **RON MULKA**

This is my fourth year at Kirtland teaching Basic Math, Basic Algebra and Math 120. In addition to teaching at Kirtland, I work at Grayling Hospital as a courier for the laboratory. In the spring and summer I work at Burning Oak Country Club (golf course). In my spare time during the winter, I volunteer at St. Vincent DePaul in Roscommon and am involved in several church-related activities. My hobbies include cross stitch, stained glass, camping and, of course, golfing.

### **JERRY NEIGH**

I have enjoyed being a secondary math teacher for 21 years, 12 years of which have been at the college level. I have been at Kirtland now for five years. My past has included a six-year stint as a Greyhound bus driver, a few

sessions serving as a Bell System long-distance operator, and I have been known to put up a few gallons of homemade beer for my own enjoyment from time to time. In the summer months, you will find me cruising around Higgins Lake on my pontoon with my family and friends. I always enjoy attending performances at the Kirtland Center for the Performing Arts. Try it! You might like it!

### **DIANE PHELPS**

My third-grade teacher recognized my love of math and nurtured it. A few years later, I realized I wanted to be a math teacher and I never looked back. I spent 10 years in secondary education before life's twists and turns caused me to leave it.

Owning a children's clothing store was my next venture, followed by trust management and owning a construction company and now teaching at Kirtland. This semester, I am at the M-TEC in Gaylord, which is perfect since I live on Otsego Lake in Gaylord. It is great to be back in the classroom. During my favorite season, summer, I can be found in my flower gardens, cruising the lake, walking my poodle, or reading; anywhere, as long as I'm out of doors.

### **BOB RICKARD**

I attended Ferris State University for my undergraduate degree in mathematics and earned my master's in educational administration from Central Michigan University. I earned an additional 18 credits in curriculum development. My career spanned 32 years in K-12 public education. I have taught computer sciences at the community college level, as well as mathematics in K-12. I have worked with adult education, GED, ABE and high school completion students. I finished

my K-12 career as an alternative education principal.

### **HELEN SCHEER**

Mathematics has opened many doors for me and I tell my students it will do the same for them. When I was a shy teenager, it gave me confidence when I succeeded in problem solving. When I needed employment, there were many opportunities. I chose teaching and computer programming. In retirement, I keep mentally active as an adjunct math instructor and lead math tutor at Kirtland where I also publish *The Math Locus*. My hobbies are playing euchre and walking my collies. My husband, Howard, shares beautiful sunsets with me at Higgins Lake.

### **DANI UTECHT**

I was born and raised in Missaukee County and, after graduating from Houghton Lake High School, I attended Michigan Technological University, earning a bachelor's degree in mathematics with a minor in computer science and certification in Spanish and secondary education. I then moved to Northern Virginia where I taught middle and high school for six years while I earned a master's degree in social foundation of education from the University of Virginia. In 2000, my family and I moved back to Michigan and I started teaching nights at Kirtland while staying home with my boys during the day. A few years and a third son later, I switched to online teaching for Kirtland. Currently, in addition to KCC, I teach for Baker College and Madonna University in Cadillac. When I am not teaching, I am volunteering in my sons' classrooms, clipping, sorting and counting labels as the PTO Labels Coordinator and organizing my church's Red Cross blood drives.