



# The $\mu$ māctuary

## In This Issue

- ▽ Fish Dinner Recap
- ▽ SOA Exam
  - Breakdown: Exam FM
- ▽ Internship Profiles
  - Andrea Leong
  - Michael Etkin
- ▽ Industry Focus
  - Jared Pursaga
- ▽ Diversions
  - Tim Rempel

Stuart Tisdale  
 Newsletter Editor  
 stuartjtisdale@hotmail.com

## Agricultural Risk Management Receives Funding

In a news conference on Friday November 14<sup>th</sup>, Winnipeg South Member of Parliament, Rod Bruinooge, announced that the federal government will be investing \$500 000 towards the Guy Carpenter Professorship in Agricultural Risk Management and Insurance. A 5-year position was created last year with an initial \$750 000 of funding from Guy Carpenter and Company. With the additional funding support from Agriculture and Agri-Food Canada, the position, held by Dr. Lysa Porth, will be changed to a permanent tenure-track Research Chair which will allow her to continue her research with graduate students indefinitely. Porth joins Dr. Jeffery Pai, Dr. Xuemiao Hao, and Rui Zhou as the Warren Centre's fourth permanent faculty member.

Agricultural insurance plays a critical role in food security, and more developing countries have begun implementing crop insurance programs. Actuaries are a big part of this. "Agricultural risks are becoming more complex, and in order to help ensure the sustainability of these programs in the long-run, actuaries play a critical role, explained Porth. "The idea of this position was to create a knowledge base, in Canada, of students that were trained in agricultural insurance and could ultimately go and work for property and casualty companies."

This position is the first of its kind anywhere in the world from an actuarial perspective, and there is close international collaboration from institutes in China, U.S., India, and Europe. "Canada is known throughout the world as having one of the most successful crop insurance programs," Porth said. "(Canada) is often looked to for assistance lending our experience internationally in terms of new and innovative insurance and risk management programs." The creation of this position is another example of how our nation is setting a global standard in terms of research and innovation in the agricultural industry.

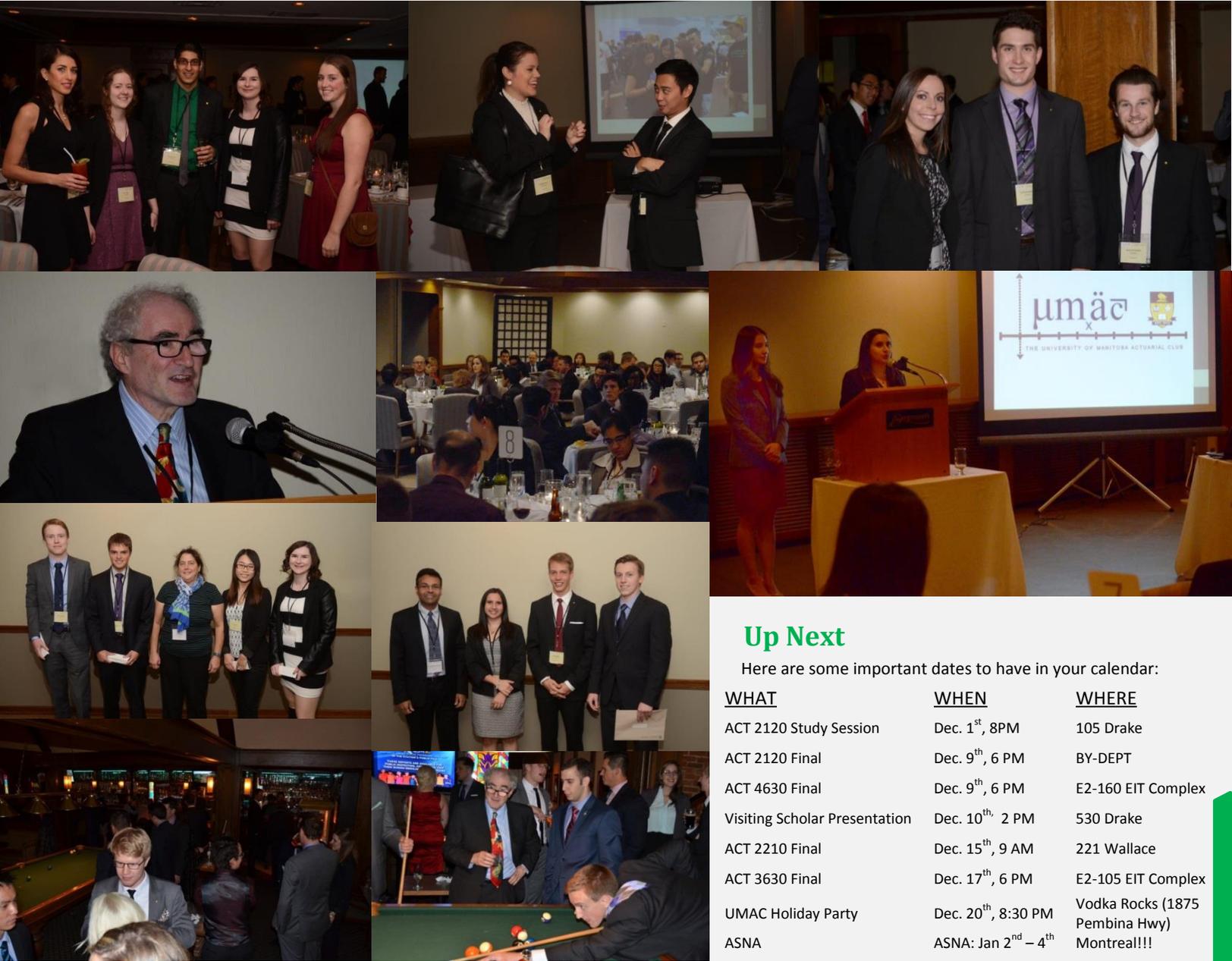
This funding comes at a very significant time for the Warren Centre as many faculties are preparing for budget cuts in 2015. Having both the private and public sectors supporting this position reinforces the importance of agricultural risk management in the Canadian economy, and is exciting news for all young actuaries.



From left to right: Dean Michael Benarroch, Rod Bruinooge (MP for Winnipeg South), Dr. Lysa Porth, Dr. Digvir Jayas

**FISH DINNER**

This year's Fish Dinner was attended by 114 students, 17 faculty members, and 62 industry members making it the largest Fish Dinner in recent history. Guests got to hear the inspiring story of how GGY AXIS came to be the international powerhouse it is today. Congratulations to scholarship winners Trevor Panchyshyn, Melanie Skierski, Yan Ying Wu, Kelly Ramsey, Eric Christianson, Nolan Kennedy, and Ryan Sharman on their outstanding achievement.



**Up Next**

Here are some important dates to have in your calendar:

<u>WHAT</u>	<u>WHEN</u>	<u>WHERE</u>
ACT 2120 Study Session	Dec. 1 <sup>st</sup> , 8PM	105 Drake
ACT 2120 Final	Dec. 9 <sup>th</sup> , 6 PM	BY-DEPT
ACT 4630 Final	Dec. 9 <sup>th</sup> , 6 PM	E2-160 EIT Complex
Visiting Scholar Presentation	Dec. 10 <sup>th</sup> , 2 PM	530 Drake
ACT 2210 Final	Dec. 15 <sup>th</sup> , 9 AM	221 Wallace
ACT 3630 Final	Dec. 17 <sup>th</sup> , 6 PM	E2-105 EIT Complex
UMAC Holiday Party	Dec. 20 <sup>th</sup> , 8:30 PM	Vodka Rocks (1875 Pembina Hwy)
ASNA	ASNA: Jan 2 <sup>nd</sup> – 4 <sup>th</sup>	Montreal!!!

FOLLOW UMAC ON TWITTER FOR ALERTS ON UPCOMING EVENTS: @UMACEXEC

&

REQUEST TO JOIN UMAC'S FACEBOOK GROUP: UNIVERSITY OF MANITOBA ACTUARIAL CLUB 2014-2015

# Exam Spotlight

## Exam FM

### Dates offered

This exam is offered 6 times a year (February, April, June, August, October, and December). The next offering is February 17 - 28

### Registration Deadlines

Registration for the February sitting closes January 8<sup>th</sup>. (Registration for the December 2014 sitting is already closed)

### Exam Format

Three- hour multiple-choice exam offered via computer-based testing (CBT).

### University Classes

ACT 2120 (Interest Theory) and ACT 2020 (Economic and Financial Applications)

### Recommended Study Manual

ASM Study Manual for Exam FM/Exam 2, 11th edition

### Pass Mark

70%\*

### Effective Passing

51.7%\*

\*Percentages based on August 2014 Examination Results

## What Students Are Saying About FM...

Memorizing all formulas didn't work. Understanding Interest Theory made derivatives way easier and vice-versa. You are quoted 100 hours study per 1 hour exam time, lots of that is accomplished during the school year. Make a schedule the month before the exam and you will crush it.

-Jordan Gerry

I had a slightly different study method for FM in that I self-taught the derivatives material. In this situation, I found it very useful to study with the ADAPT program, which provided me with tougher derivatives questions as well as reviewing Interest Theory material within the practice exams. One other piece of advice is for the questions that are "proofs" or asking to rearrange formulas, it can be helpful to simply plug in numbers to each possible solution to save time solving the actual question.

-Bradley Abells

One of the things is definitely not to get discouraged when going through all the tough problems in the ASM manual, I found the actual exam to be more clear with what they are asking for and how to approach each question. Take note that a lot of the practice problems are from like 1990's and a lot has changed since then. Another thing to take note of is that the number of derivatives questions is increasing, so it's beneficial to master these topics as the questions are usually simple and can be completed fairly quickly.

-Jacky Ng

Interest Theory with Jeff definitely prepared me for the Interest Theory portion of the exam. The derivatives portion on the exam was far harder than class. I used Adapt, and that helped me be more than prepared for the exam. Highly recommend the program, best source of material and questions I found, especially for the derivatives.

-Lucas Szczepanski



I thought the exam was fairly easy compared to the tests we had in Interest Theory. There were a few very difficult questions, but the key is to recognize this and not waste time on them on the first go-round. I kept a list of all the problems I couldn't solve on the first attempt, and made a point of coming back to them the week before the exam. It helps your confidence when you feel you can handle anything they throw at you. Don't get too worried about the time constraints while you're studying. If you learn the material well, you'll be surprised how quickly you're able to finish the practice exams.

-Avi Saper

If it is your first time taking the exam at the exam centre, make sure you recce the place at least once before the actual day so you know how to get there on time. Make sure you eat enough before the exam; remember it's a three hour exam and you can't think well on an empty stomach. Work through each exam question at a comfortable pace, be confident in your own working/answer. If you're stuck, move on to the next question; work on the easier questions first to boost your morale. Skip the questions that are too wordy as they tend to take up more time (your brain is less efficient when having to read and do math at the same time).

-Francis Seah

# Internship Profile

## ANDREA LEONG

This past summer I had the opportunity to intern at John Hancock in Boston, Massachusetts. In 2004, John Hancock was acquired by Manulife Financial and operates as its US division. I interned in the US Life Pricing department, which is a very traditional actuarial role.

At John Hancock, whenever a new product is developed, a few members of the pricing department are chosen to help price that specific product. I was placed on a team that was pricing a variable Universal Life product. Universal life insurance is traditional life insurance with an investment component. During my summer, I had two main projects. My first project involved rate testing for the new product, to ensure that premiums were being calculated correctly. The second project I worked on dealt with analyzing the present values of mortality gain/loss due to deficient cost of insurance charges under different interest rate scenarios. It was interesting to see what aspects go into developing a product, and especially cool to contribute to something that will be directly available to consumers. I learned so much from my department, and everyone was extremely supportive and eager to help me learn and grow.

John Hancock has a very formalized intern program that has been around for many years. One unique aspect of the internship program was the Actuarial Summer Intern Debate. My intern class consisted of ten students, and we were divided into two teams to research a topic to be debated at the end of the summer. This year, the topic was "Should John Hancock enter the middle market for life insurance?" The debate provided the interns with a rare chance to develop persuasive speaking skills, as we were attempting to convince the audience to vote in our favour. Preparing for this debate was hard work, but in the end it was worth it, as I was on the winning team!

Other aspects of the internship program included meeting with the President of John Hancock, mentorship lunches, and several social events. As well, John Hancock provides housing for all the summer interns in the same building, so I was able to develop very close relationships with other students from other universities.

Aside from work, living in Boston was an amazing experience! There is something to do for everyone. There are many delicious restaurants to eat at, numerous sporting events throughout the year (summer is baseball season – Go Red Sox!), different food truck festivals and outdoor markets, vibrant nightlife, and most importantly, great shopping. Overall, it was an unforgettable experience and I highly recommend it to everyone!



Andrea and the winning Actuarial Summer Intern Debate team



# Internship Profile

## MICHAEL ETKIN

This past summer I had the pleasure of working for Manitoba Public Insurance. All four of MPI's full time actuaries work in downtown Winnipeg in the 7th floor of Cityplace Mall. This very small team - a P&C company of similar size could easily employ over 30 - has a lot of responsibility including ratemaking, claims forecasting, product modeling, and stress testing. The entire team works in a department called *Pricing and Economics*. The best part, actuarial interns have direct contact with the Chief Actuary many times every week. That kind of exposure is unusual in most large companies.

As a crown corporation, there are no shareholders to share in profits. Instead profits are used to build a financial safety net (Rate Stabilization Reserve or RSR) and to lower prices for all Manitobans. Similarly, losses are drawn from the RSR and sometimes lead to price increases. MPI rate changes are regulated by the Public Utilities Board (PUB). When MPI proposes insurance rates for the upcoming year, the PUB asks two rounds of questions about processes, assumptions, etc. used in the ratemaking process. As an actuary, you will have to explain how you make decisions and why you came to conclusions.

What kinds of decisions are we making? Well since no profits are being collected, we try to price products so that we can pay all claims, pay our staff and break even. We must decide which variables to include when setting rates and how to weight them. We must make predictions on how much money will be paid out in claims this coming year. Some of the calculations are math based and predictable -such as modeling how many drivers will renew their licenses - but much of what actuaries at MPI do is subjective decision making. Consider how labour markets will affect auto shop wages, or how climate change will affect annual hailstorm damage. These are questions that computers and equations simply cannot handle without some human problem solving. We are the problem solvers!

The future at MPI is very exciting! We face some very interesting challenges brought on by technological development. We must begin to tackle difficult challenges such as how increasing human lifespans will affect disability costs and how driverless cars will affect claims frequencies. Actuaries will be expected to lead the way in preparing for our uncertain future, a very rewarding career path.

Finally, consider what working in the public sector means. You will face more regulation and the government has the power to step in and make decisions that do not align with your recommendations. The general public tends to be critical of insurance companies, as a monopoly MPI is visible and the often the only option for auto insurance products, making media attacks frequent and more vicious. Pay tends to be lower, actuary interns are no exception. However, working in the public sector is incredibly rewarding. Products are designed primarily to help the population, not to make money. The corporation works closely with other government organizations (police, WCB, etc) to lower risk on the road and financially protect drivers and their families. If you have any questions about working with MPI, please contact me and we can discuss everything in person. All the best!



Jared Pursaga graduated from the University of Manitoba in 2009 and began working at The Wawanesa Mutual Insurance Company. He obtained his FCAS in 2014 and currently holds the position of Manager, Actuarial Pricing – Eastern Canada. Recently, he was kind enough to answer a few questions for The UMACtuary...

**Q: What is the most common mistake that students make during interviews?**

Jared Pursaga: I was personally involved in the hiring of both our full time and intern employees this year and I honestly have to say that U of M actuarial students don't make many mistakes. I was blown away with the quality of the candidates and how well prepared each individual was. I can give you a long list of mistakes that I have made when I was seeking employment, but it seems to me that the current students are far more prepared for interviews than I ever was. This is most likely attributed to the opportunities available to students such as speed interviewing.

**Q: What are some of the key differences between a career in P&C insurance and a career in life insurance?**

JP: I have had the opportunity to intern with a pension consulting firm, a stock life insurance company, and I'm now the manager of Actuarial Pricing Eastern Canada at The Wawanesa Mutual Insurance Company, who has assets of over \$8 billion. Wawanesa Insurance is primarily a P&C insurer however it does have two wholly owned subsidiaries, Wawanesa General insurance operating in California and Wawanesa Life who is head quartered in Winnipeg. The differences between P&C and Life actuaries from my experiences are; Life actuaries are involved in areas such as valuation, interest rate modeling, long term disability, short term disability, and many more. Many individuals are not aware that as a P&C actuary, we are required to model those same risks as well. For example, if you are injured in a car accident you may be off work for a few weeks, months, years, or possibly the rest of your life. As a P&C actuary we are responsible for estimating and modelling those disability claims. Additionally, P&C actuaries are responsible for the valuation of the company's assets and liabilities, projecting the interest rate, pricing of the insurance product, and reviewing our market position, to name only a few.

The biggest difference between the P&C and life insurance industry is the duration of the contract. Wawanesa's longest contracts are only for one year. At any time, policyholders are free to shop around for coverage and possibly find a different insurance company. It is possible that a policyholder may be with our company for a few years, have a claim, and then purchase insurance from another market. Back to life insurance, if you sell a whole life insurance policy the probability of having a claim is 100%, everyone will use this coverage at some point. However, if you sell a client an automobile insurance policy, only a small percentage of the total population will have an accident in the next year. It is possible to reduce your frequency of claims by selecting the "right" risks. If you can attract risks with a lower likelihood of claims, then you can offer coverage for lower premiums to current and prospective clients. As you may have guessed already, risk selection is an extremely important subject for a P&C actuary.

**Q: What are some of the problems that the Property & Casualty Industry will face in the future and how do actuaries fit into solving these problems?**

JP: The challenges facing the P&C industry are always changing. At the top of the list today in Canada are climate change, availability of flood/earthquake coverage, increased regulation/capital requirements, telematics and autonomous vehicles. Actuaries are always projecting estimates into the future, and therefore we need to be well aware of the changes in the industry. Most people may not be aware of self-driving cars (autonomous vehicles) today but multiple companies have announced plans to produce them. In fact, recent

model years of many vehicles on the road today include autonomous features such as; intelligent parking assist, lane departure warnings, blind spot monitoring, adaptive headlamps, just to name a few. The Ontario government has announced a goal to have its roads ready for autonomous vehicles within the next few years. When challenges like this come up in the industry, actuaries are depended upon to provide direction to the company on how to handle these changes. Actuaries are trained with the skills required to calculate the impact of these events and provide guidance on how the company should adapt to these opportunities. Even a P&C actuary knows, "Risk is Opportunity."

**Q: What opportunities for professional development are offered at Wawanesa?**

JP: Wawanesa has, in my opinion, the most comprehensive study program for its actuarial students. In addition to providing the same number of days for both your first and second attempt at an actuarial exam and covering the cost of the exam, Wawanesa sends its students to attend actuarial conferences all over North America so that we can meet other actuaries from other companies and improve our industry knowledge. I started with Wawanesa in July of 2009 and recently became a manager and a Fellow of the Casualty Actuarial Society. During 2014 I travelled to: Washington, Moncton, New York, Las Vegas (twice) and Toronto (three times). Wawanesa is committed to providing life time education to its actuaries.

**Q: Wawanesa is a mutual insurance company. How does this affect company culture?**

JP: The mutual makes the difference. Customers ask their insurance broker for us by name! Wawanesa is owned by our almost two million policyholders and does not have shareholders. As a mutual we are accountable to our policyholders and our mission is to provide quality products and services at the lowest price which supports long-term growth and financial stability. Wawanesa continues to grow in both premium base and market share. A.M. Best, has consistently awarded Wawanesa Insurance an A+ (Superior) rating based on financial strength and stability. As a result both policyholders and staff tend to stay with Wawanesa as we have a culture of doing what is best for our policyholders and we conduct business with integrity, honesty, consistency and fairness.

**Q: Full time actuarial hiring at Wawanesa has increased over the last few years. How has the actuarial program evolved with this influx of young actuaries?**

JP: I started in July 2009, and I am the 6<sup>th</sup> most senior person in the actuarial group. Our CEO refers to the actuarial group as the Winnipeg Jets of actuaries: "We are building through the draft." All of our actuaries graduated from the University of Manitoba and they are all great draft picks with huge potential. Our CEO is an Associate of the Casualty Actuarial Society himself, and as a result of this the importance of actuaries has increased significantly. It is safe to say we will be continuing to hire more and more actuaries each year for the foreseeable future.

**Q: What do you like about working at Wawanesa? What keeps you there?**

JP: The Wawanesa Mutual Insurance Company treats its employees with respect and always strives to do the right thing. This environment creates a culture where people work collaboratively and effectively together. In addition to the exceptional workplace culture, Wawanesa offers a comprehensive benefits package. I worked for a large pension consulting firm prior to joining Wawanesa, and in reviewing multiple pension plans, Wawanesa has the most generous pension plan I have ever seen. Additionally, we have premium free extended health and dental benefits, education assistance, reimbursement of professional dues and profit sharing. One more thing, effective January 1, 2015, Wawanesa is providing all employees with 3 personal days and a Short Term Disability Program. The Wawanesa Mutual Company does the right thing for its employees and its policyholders!

Complete this edition's puzzles for a chance to win UMAC merchandise! Please submit your answers to diversions expert Tim Rempel at [timrempel2@gmail.com](mailto:timrempel2@gmail.com). There will be one winner for each edition!

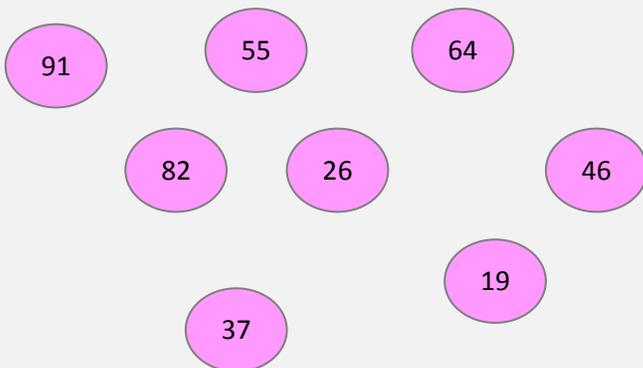
**PUZZLE 1:**

Can you work out what number each of these Greek letters represents and find the value of the question mark?

35	47	38	24	
$\mu$	$\Omega$	$\Omega$	$\Omega$	?
$\beta$	$\mu$	$\mu$	$\beta$	40
$\beta$	$\lambda$	$\beta$	$\beta$	21
$\lambda$	$\lambda$	$\lambda$	$\lambda$	48

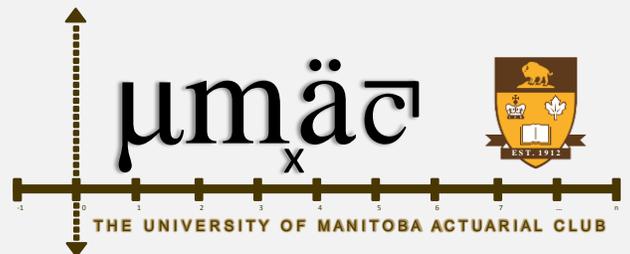
**PUZZLE 2:**

Can you figure out which of these balls is the odd one out?



**PUZZLE 3:**

Three married couples are standing on a riverbank and there is only one boat available for crossing the river. The boat can carry only two people, and at least one to go from one shore to the other. The husbands are all extremely jealous and do not trust their wives to be alone in the company of other men, even when the other men's wives are present! Both husbands and wives are able to row the boat. Is there a way for all three couples to cross the river without any of the wives being left in the company of the other men without her husband present with her?



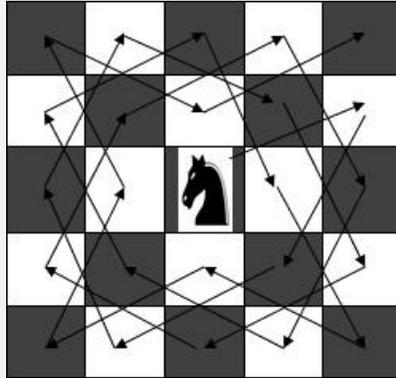
# LAST EDITION'S ANSWERS

## PUZZLE 1:

The number that should replace the question mark is 9. The pattern is that the numbers in each cell travel around the box clock-wise adding 1. The last box in this group shows the third step of this pattern, the bottom left cell of the third box was 8, so it shifts up and adds 1 to become 9 in the fourth box.

## PUZZLE 2:

The path outlined on the board is the solution. It is not possible to end on the starting point on a 5x5 board



## PUZZLE 3:

The wise men are lined up with the first wise man to be asked at the back of the line facing the backs of all the other 99 wise men. He is able to see and count the blue and red hats that are in front of him. When the first wise man is asked what colour his hat is he will say "Blue" if he counts an even number of red hats and "Red" if he counts an odd number of red hats. The wise man in front of him will now know if the count of red hats should be even or odd, so he counts all the red hats in front of him. If the second wise man counts an odd number of red hats but heard the one behind him say "Blue"=even # red hats, then he knows he must be that one red hat that is missing from his own count. Every time a "Red" is heard, all the wise men will know that the running odd/even counter of red hats has changed from odd to even, so all each one has to do is listen for what the first wise man said to know the starting odd/even count, and then keep track of the number of "Red" they hear, and finally, count for themselves the number of red hats in front of them and say the appropriate thing. The second and all future wise men now say "Red" if they count different than what the running odd/even number of red hats is up to themselves, and "Blue" if they count the same as the running odd/even number of red hats is up to themselves. The very first wise man has a 50/50 chance of dying since he doesn't know anything about his own hat colour.

# LAST EDITION'S WINNER



Owais Raza, seen here wearing his new favourite T-shirt, won last edition's diversions challenge by submitting his answers to [timrempel2@gmail.com](mailto:timrempel2@gmail.com). You too can bask in the glory of winning a free T-shirt by sending in your answers for this edition's puzzles!