

## Q&A with the Author

### **Q: Why write a math novel?**

**A:** In March 2010, I moved to Japan with my wife Karen after she landed an amazing job teaching English at a top-notch Japanese university. As an unemployed house-husband living in a new country, I wondered how I could best apply my passion and experience to contribute to society. Having a love for expressing myself through writing, as well as possessing a Ph.D. in mathematics, I felt inspired to write a “math novel”. Nearly five years later, I published *The Math Olympian*, the story of an insecure teenager who commits herself to pursuing the crazy and unrealistic goal of representing her country at the International Mathematical Olympiad, and thanks to the support of innovative mentors, combined with her own relentless perseverance, discovers meaning, purpose, and joy.

### **Q: But why a novel, and not a textbook?**

**A:** I loved how *Sophie's World* reached millions of readers with no background in philosophy. The author did a masterful job of making philosophy accessible and enjoyable. Similarly, my goal is to reach a wider audience with *The Math Olympian*, sharing beautiful Olympiad-level math with the general public, and revealing the surprising and unexpected applications of mathematics to everything in this world. While my target audience is high school students (particularly female students who have an interest in math), I hope that many others will enjoy the book too!

### **Q: Why did you feel qualified to do this?**

**A:** I felt qualified to attempt this ambitious project, given my experiences as a former Math Olympian for Canada, as a coach and trainer for Canada's Math Olympiad team, as the founder of two math outreach programs that have reached thousands of high school students in Nova Scotia, and as a mathematician for the Government of Canada who spent four years

developing math-based solutions to improve the security and efficiency of the Canadian border. Given my experiences, as well as the mentorship I have received from so many world-class teachers, I felt that I could write a novel that would reveal creative ways to teach and learn mathematics, and show how the subject develops problem-solving skills, daring, critical-thinking and imagination – the types of skills Canadians require if we’re going to be at the forefront of innovation in the twenty-first century.

**Q: How much of your novel is based on real-life experiences?**

**A:** All of the characters are fictional, but they are hybrids of real people who have influenced my life. For example, Bethany meets several mentors throughout the course of the book; all of her mentors are inspired by actual mentors I’ve had over the past twenty years, who modeled innovative teaching techniques and showed me that mathematics isn’t about memorizing formulas or rules (in high school) or about memorizing theorems and proofs (in university). Also the settings of various scenes parallel some of my own personal experiences. For example, all of Chapter 2 is set in Ottawa, at a week-long event called the “Canada Math Camp” (formerly known as the National Math Camp). As I was the co-director of the National Math Camp for seven years, I could draw upon my experiences as a coach and trainer to create each scene and show how difficult problems could be solved in a myriad of elegant ways.

**Q: How did you come up with the five Olympiad problems that form the core of the book?**

**A:** I wanted to present actual Olympiad problems, not watered-down versions of the real thing. As a result, I selected five actual problems that have previously appeared on the Canadian Mathematical Olympiad. I chose these five problems as they are five problems that I know really well, based on my own experiences of attempting to make the Canadian IMO team nearly twenty years ago. Bethany’s solutions to these problems are completely (or nearly) identical to my solutions on these contests, which I still vividly remember.

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### **Q: You were really driven to publish this book. Why?**

**A:** In 2009, I applied for a job that would have given me the platform to make a significant contribution to the Canadian math community by becoming a champion for pure and applied math research, and an advocate for improving math education at all levels, as well as reaching the target audience I was most passionate about – high school students and their teachers. And after I didn't get that job, I felt I had lost my one chance, my one platform, to make that significant contribution to the community that had given me so much. A mentor gently suggested that I didn't need to have *that* job in order to have that kind of impact. Perhaps it was this conversation that inspired *The Math Olympian*, realizing that through writing and publishing this book, I could make the contribution I had longed for.

### **Q: How did you choose the name Bethany MacDonald?**

**A:** Many names have a special meaning, such as Amy (beloved), Karen (pure), and Sophia (wise). Based on the experiences the main character goes through, I wanted a female name that meant something like “One who perseveres through adversity and becomes a champion”. But I couldn't find the right name. I eventually settled on the name Bethany because it was a name I've always liked, despite not having any meaning other than “House of Figs” in Hebrew. However, I did find one website claiming that Bethany means “New Beginnings”, and I decided that was a good name for this character, especially given the parallel plot line of Bethany's mother.

Over a year after I started writing the book, I heard the remarkable story of a young woman who had achieved her dream of becoming a world-champion professional surfer despite losing her left arm as a teenager in a shark attack. This inspiring story became the hit movie *Soul Surfer*, which I saw in Toronto in the summer of 2011. When I learned that the surfer's first name was Bethany, I knew that wasn't a coincidence – I definitely had the right name for my main character! As for Bethany's last name, I went with MacDonald, the most common last name in Cape Breton, and also the last name of the celebrated Cape Breton family in *No Great Mischief*, Alistair MacLeod's masterpiece of loyalty, family, and discovering your identity.

**Q: Why is your main character a girl from Cape Breton?**

**A:** I want to challenge the common stereotype that mathematics can only be done by boys, nerds, and Asians (i.e., people like myself). I want *The Math Olympian* to reveal how with inspired mentorship, anyone can succeed in mathematics and develop the confidence, creativity, and critical-thinking skills so essential in life. Through my involvement with math outreach programs at Dalhousie University, I met young women like Bethany all throughout Nova Scotia. It is my hope that Bethany's story will inspire high school students, girls especially, to participate in math contests and math outreach activities, take mathematics courses in college or university, and pursue a future career in mathematics to tackle the complex challenges of the 21<sup>st</sup> century.

To support these goals and “pay it forward”, I will donate 10% of my author royalties to the Canadian Mathematical Society (CMS), an organization that promotes the advancement, discovery, learning and application of mathematics in Canada. Half of this donation will go to the CMS Math Camps Program, and the other half will go to support the initiatives of the CMS Women in Mathematics Committee.

**Q: What are the key messages of your novel?**

**A:** There are three key messages that I tried to convey in *The Math Olympian*, all of which are connected. The first is that our dreams are worth pursuing, no matter how unrealistic, because they motivate us to reach our fullest potential and maximize our contribution to society. The second is that by choosing a roller-coaster life, that is, a life of courage rather than a life of comfort, we inspire those around us to do the same. And finally, in searching for truth with all of our heart and relentlessly pursuing the calling of our life, we'll be given opportunities beyond anything we could ever ask or imagine.