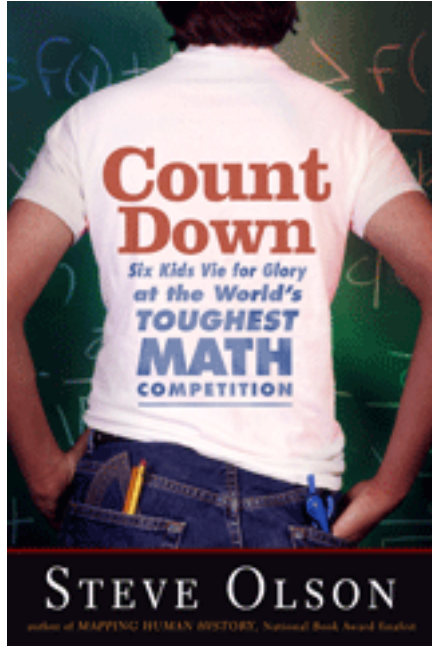


A Reader's Guide



Count Down

by Steve Olson

- Questions for Discussion
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Questions for Discussion

Introduction

The United States has been participating in the International Mathematical Olympiad for more than a quarter of a century, but the competition is not at all well known by the American public. In contrast, in other countries the annual results from the Olympiad are widely reported. What factors could account for the lack of attention given to intellectual competitions compared with athletic competitions in the United States?

Chapter 1: Inspiration

Women are severely underrepresented in mathematics in general and in mathematical competitions in particular. Do you think cultural and social factors account entirely for this underrepresentation, or are biological factors involved?

Chapter 2: Direction

Many members of U.S. Olympiad teams can point to specific individuals who have fostered and supported their love of math. Do you remember someone who influenced your perceptions of math in a positive or negative way?

Chapter 3: Insight

Do you tend to solve math problems spatially or verbally? Do you think such preferences are different for boys and for girls?

Chapter 4: Competitiveness

Mathematical contests typically involve a balance of cooperation (especially during the preparation for an event) and competition. Do you think you perform better or worse in a competitive situation? What are some of the arguments for and against competition, not only in mathematics but in other areas?

Chapter 5: Talent

Many people believe that certain individuals are inherently good at mathematics and others are inherently bad. To what extent do you think that mathematical abilities are inborn? Can anyone become a good problem solver if he or she practices enough?

Chapter 6: Interlude

The math Olympians spent much of their free time before and during the competition playing games. What traits might people who are enthusiastic about mathematics have in common with people who love games?

Chapter 7: Creativity

The most important attribute influencing the success of the Olympians was their creativity. Why do you think mathematics is so often thought of as not really creative?

Chapter 8: Breadth

The Olympians had many different interests and engaged in many activities besides mathematics. Do you think a diversity of interests fosters success in most endeavors, or is single-minded concentration on a task more likely to lead to success?

Chapter 9: A Sense of Wonder

Mathematicians often speak about the "elegance" and "beauty" of mathematics. Have you been exposed to any mathematical concept that you consider beautiful? How might mathematics be taught to help schoolchildren appreciate the aesthetic appeal of math?

Chapter 10: Triumph

The United States typically has been one of the top five teams at the Olympiad, but the U.S. team has finished with the top score just four times in the history of the event. What factors might account for the success of other countries at the Olympiad?

Chapter 11: Epilogue

Only about a quarter of past U.S. Olympians have become research mathematicians at universities, though most end up applying their quantitative skills in their chosen professions. How can childhood interests influence lifelong pursuits in positive ways?

Questions to Consider After Reading *Count Down*

Have your perceptions of mathematics changed as a result of reading about the International Mathematical Olympiad?

Should mathematics competitions be emphasized as a way to strengthen interest in mathematics among school-aged children?

In what ways does the success of individual Americans in international competitions reflect on the success of U.S. education or on American society in general?