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Malá kniha o velkých číslech

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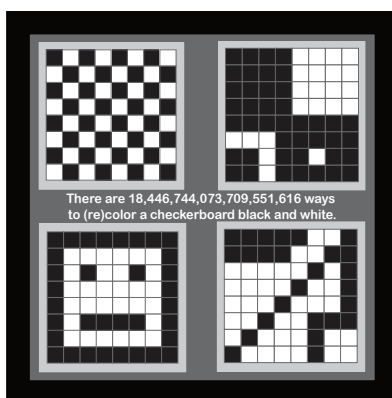
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Malá kniha o velkých číslech (The little book of REALLY BIG numbers)

V Rozhledech matematicko-fyzikálních bychom chtěli dávat prostor i anglicky psaným článkům doprovázeným slovníčkem. Zahájíme recenzi knihy *Really Big Numbers* od Richarda Evana Schwartze, která je převzatá z časopisu *London Mathematical Society Newsletter* se svolením autorů i editora [1]. Rovněž k publikaci obrázků máme svolení společnosti *American Mathematical Society*.



If you believe the maxim “Readers should have at least as much fun reading the book as the writer had writing it”, the readers of this book are up for a treat. It is more than clear that Richard Evan Schwartz had tremendous fun putting the book together. It is a work of love; in fact, of multiple loves.

First, there is the obvious love for numbers and shapes. Then there is the love for his young daughters who inspired the book, and who are our companions along the ride through the vast universe of numbers. The author also loves making complex topics clearer and more accessible to everyone, even small children, in a very nice, playful, visually engaging and colorful way.

Filled with engaging illustrations made by the author with the help of a computer drawing program, and printed in brilliant colors, the book gradually guides us through the counting numbers, starting from single

digits and moving up fast. The first half of the book relies on beautiful examples of really big numbers from the world around us. We are invited to visualize them using intuition building facts like: “About 7 billion people live on Earth. If everyone joined together in a giant chain and lifted off the earth, on the right day they would reach about a quarter of the way to Mars”. An occasional ‘dry’ example from combinatorial counting gives the book a somewhat more serious footing, and something for mathematically more mature readers to think about.

The first number that goes beyond counting anything meaningful—being bigger than the number of all atoms in the observable universe—appears roughly halfway through the book, and right after that things really take off. When dealing with numbers too big to visualize, we enlist the help of the language. This part of the book is mostly devoted to the use of notation and recursion for creating ever larger numbers. There are so many BIG numbers in the book that they barely fit in its small format. Some too big to even name.

The book gets better with every reading. It has a wonderful design, it is well produced and nice to look at and hold. Even though it is intended for the young readers, first-ever AMS book for children, we believe that it is best enjoyed if read together: a child and a patient and mathematically inclined adult. It is great for sharing, and for explaining why we like mathematics so much. Get it with someone small you love, and start a journey. Have fun along the way and do not be afraid of taking those big leaps, because as you will learn in this book “Infinity is farther away than you thought”.



Robert Jajcay and Tatiana Jajcayová, both mathematicians at Comenius University, in Bratislava, Slovakia, had fun reading and re-reading this book with their daughter Greta, and are looking forward to yet more re-readings and more curious questions about really big numbers from her.

Images from Richard Evan Schwartz, *Really Big Numbers* (Providence: American Mathematical Society) ©2014. Used with permission.

Literatura

- [1] Jajcay, R., Jajcayová, T.: Richard Evan Schwartz: Really big numbers (American Mathematical Society, Providence, 2014). *London Mathematical Society Newsletter*, a review, roč. 442 (2014), December, s. 30–31.

Slovníček:

maxim = pravidlo

to be up for a treat = mít se na co těšit

tremendous = obrovský

shape = tvar

companion = společník

vast = rozsáhlý

universe = vesmír, svět

accessible = přístupný

engaging = podmanivý, poutavý

billion = miliarda

footing = základ, podklad

mature = zralý/vyspělý

take off = odstartovat

barely = sotva

mathematically inclined = matematicky zaměřený

take a leap = udělat skok, ale také přijmout výzvu